VOLUME XXVIII

NUMBER ONE

THE NATIONAL GEOGRAPHIC MAGAZINE

JULY, 1915

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Size, 28 x 30 Inches

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Glimpse of Mt. Rainier, Glacier National Park and Others

With 9 Illustrations

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Hamilton Watch

"The Watch of Railroad Accuracy"

Used for Navigation—"Far more accurate than the average chronometer," says Captain in U. S. N.

The following letter, recently received from an officer of the Navy, speaks for itself. The signer's name is omitted for reasons of Naval etiquette.

HAMILTON WATCH COMPANY
Lancaster, Pa.

Gentlemen:—The watch purchased from you in December, 1913, is a marvel of accuracy. On January 1, 1914, it was set 22 seconds fast, on standard mean time, and throughout the year frequent comparisons were made which showed a steady and regular gain. On January 1, 1915, it was again compared and was found to be 1 minute 35 seconds fast, or a gain of 1 minute 13 seconds in 365 days, which is equivalent to a gaining rate of 0.2 seconds a day, or 6 seconds a month.

Had the rate of gain been variable, it would have been very different, but running as steadily and uniformly as it did, I would have no hesitancy whatever in using it for navigational purposes, as it is far more accurate than the average chronometer used for this purpose, and much more convenient.

(Signed)

IMAGINE yourself carrying this very watch—it was not an expensive watch. Wouldn't you derive an immense satisfaction from the comfort, convenience and companionship of so accurate a watch? Every Hamilton Watch sold has Hamilton Accuracy and Hamilton Durability.

Prices of Hamiltons: The lowest-priced Hamilton is a movement alone for $12.25 ($13.00 in Canada). The highest-priced Hamilton is our Masterpiece at $150.00 in 18-k heavy gold case. Other Hamiltons at $15.00, $25.00, $28.00, $40.00, $55.00, $80.00, $110.00, etc. Hamiltons are made in many models—in cased watches; also in movements alone which your jeweler can fit to your present watch-case.

Write for Hamilton Watch Book, "The Timekeeper"

describing all models and containing much interesting watch information.

The Hamilton Watch Exhibit at the Panama-Pacific Exposition at San Francisco is in the Palace of Varied Industries, under the Dome. You are invited to see it.

HAMILTON WATCH COMPANY

Dept. 35 Lancaster, Pennsylvania

$500,000 Added This Year

To Better Goodyear Tires

This is a day of close margins in tires, with every temptation to skimp. On February 1st, Goodyear made its third big price reduction in two years. The three total 45 per cent. But mark that in Goodyears this downgrade price applies to an upgrade tire.

This year's improvements will add to our tire cost about $500,000. We could add that to our profits if we built this year's tires like last year's. Yet last year's Goodyears outsold, on sheer merit, any other tire in the world.

Total, $1,635,000

The total cost of our extras on this year's probable output will be $1,635,000. By extras we mean—First, the five exclusive Goodyear features employed by no one else. Second, hidden extras not commonly employed, meaning extra strength and wear.

Those are unseen extras which one never misses until troubles reveal their lack. Tires which lack them look like tires which have them. We give them solely so that final verdicts will favor Goodyear tires. But their omission would cost our users many millions of dollars this year.

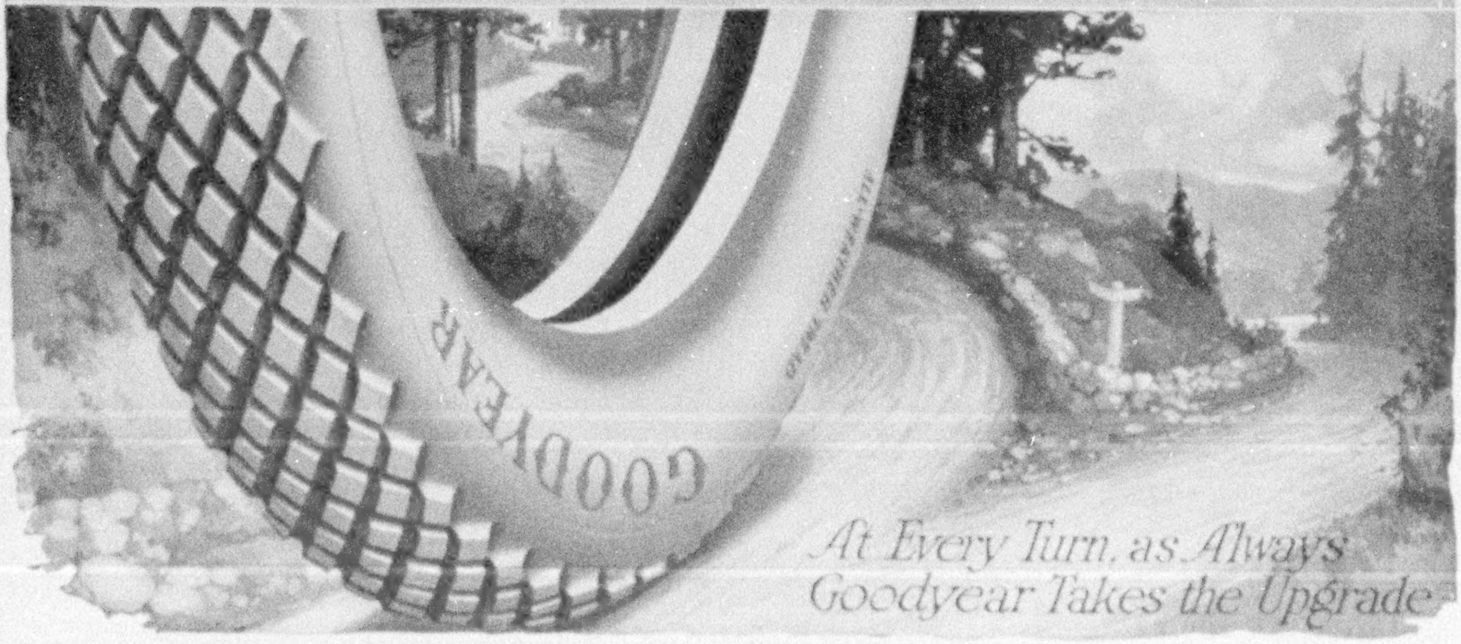
Tires Not Alike

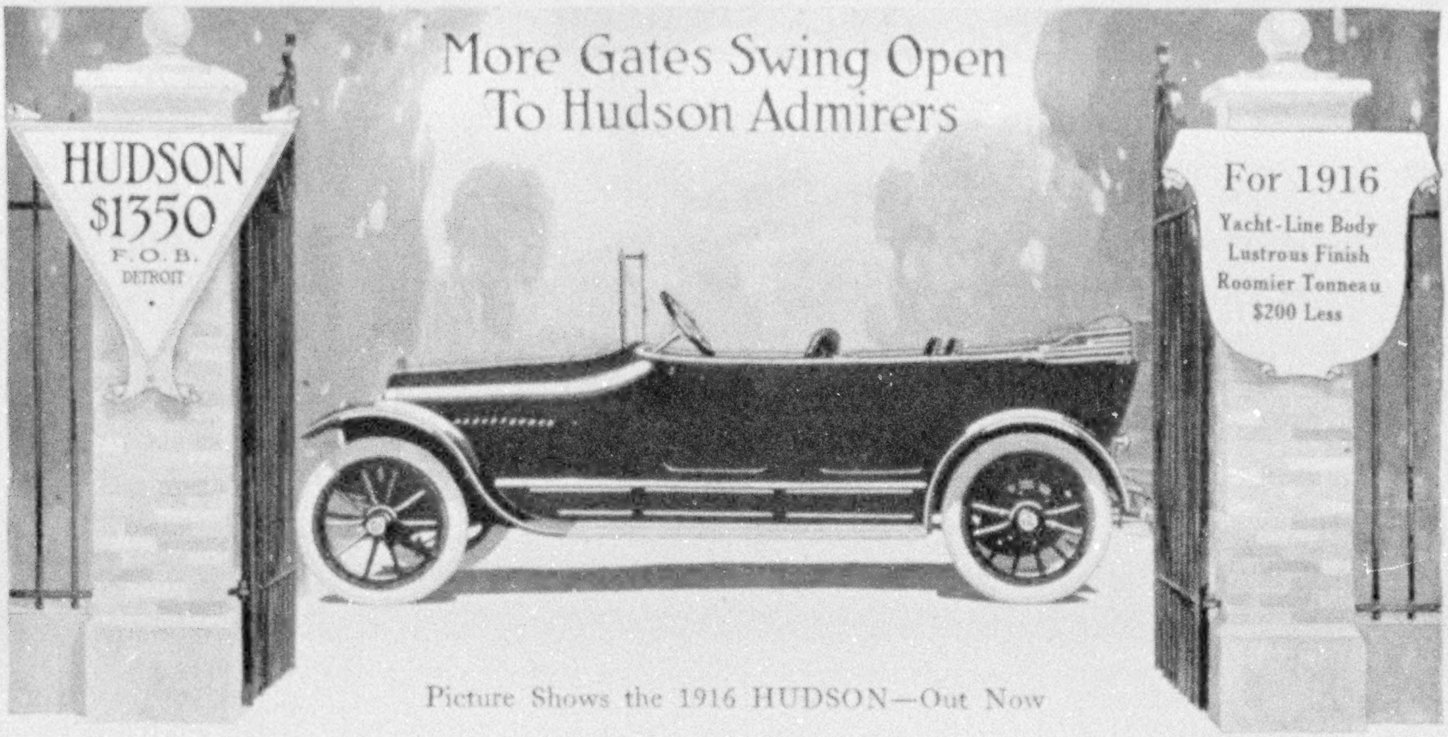
The moral is that tires are not alike. You make a costly error if you think so. The only way to average maximum mileage and minimum trouble is to ask for the Goodyear Fortified Tire.

Some half million users have proved that worth doing. We ask you to prove it this summer. Any dealer will supply you.

GOODYEAR
AKRON, OHIO
Fortified Tires
Fortified Against
Rim-Cuts—by our No-Rim-Cut feature.
Blowouts—by our "On-Air" cure.
Loose Treads—by many rubber rivets.
Insecurity—by 126 braided piano wires.
Punctures and Skidding—by our double-thick All-Weather Tread.

THE GOODYEAR TIRE & RUBBER CO., Akron, Ohio





Picture Shows the 1916 HUDSON—Out Now

More Reasons for 1916 Hudson

To all the HUDSON attractions we now add these:

Yacht-Line Body
Lustrous Finish
A Roomier Tonneau
More Luxury
A $1350 Price

That price means another $200 reduction, the second in twenty months. Both have resulted from multiplied output, due to the car's popularity. Now at $1350 we are swinging open in the widest way the gates to HUDSON class.

Some Other Things You've Wanted

We do not, and we cannot, offer you a better chassis. Nobody wants or expects it. Howard E. Coffin did his best in designing this. Our engineering corps has done its best in refining it. This final Six embodies all that seems to us desirable.

In twenty months, 15,000 men have bought this new-type HUDSON. They've applied every possible test. And not one, we believe, has ever seen, or wants to see, a better car than this.

But there are things you do want, which all cars lacked, and we've brought them out this year.

Yacht-Line Body

This is the fruition of all aims since foredoors were inserted. Then came straight lines, then streamlines, but all those lines were broken. In this Yacht-Line Body we reach perfection in graceful, sweeping lines. Even the door lines are unbroken. The body and door tops form a level line, and that line is *leather-bound*.

We have widened the rear seat so three big folks don't crowd it.

We have built a roomier tonneau. And the room is doubled when only five are riding. The two extra seats completely disappear.

We upholster with enameled leather this year, the costly finish of the high-priced car. Thus we bring you all the comfort, all the luxury it is possible to give.

For safety's sake, and for extra wear, all wheels have non-skid tires.

Finish That Stays New

And now we bring out a much-wanted innovation—our Lustrous finish, exclusive to HUDSON cars. It has required an immense factory addition, equipped with ovens to hold hundreds of bodies.

Now each under-coat of finish is baked on to give it wondrous hardness. The result is a finish which keeps its newness and lustre. It resists weather and washing, rubbing and mud. It combats as never before the main cause of depreciation.

A Trebled Output

But our best announcement is a trebled output. There will be overdemand for a while now, as with every new-model HUDSON. But the long waits of last year will not be repeated. And men who want HUDSONS will not be forced to take some second choice.

We are building of this new model 100 cars daily—a record fine-car output. You can get one—perhaps at once—if you see your dealer now. These new cars are now everywhere on show.

7-Passenger Phaeton or 3-Passenger Roadster, $1350, f. o. b. Detroit. Also a new Cabriolet, $1650 f. o. b. Detroit

Each HUDSON car brings with it the matchless HUDSON service. Ask our dealer to explain it. You will see how much it means.

HUDSON MOTOR CAR COMPANY, Detroit, Michigan

NY
1913
12511

The Lincoln Highway

when completed will be 3,000 miles long. You can make the round trip of 6,000 miles on Kelly-Springfield Tires and be covered every mile of the way by the liberal Kelly-Springfield mileage basis of adjustment. Not that it's likely you will ever need to think about adjustments; for it is a plain statement of fact that in 1914, ninety-nine per cent of all

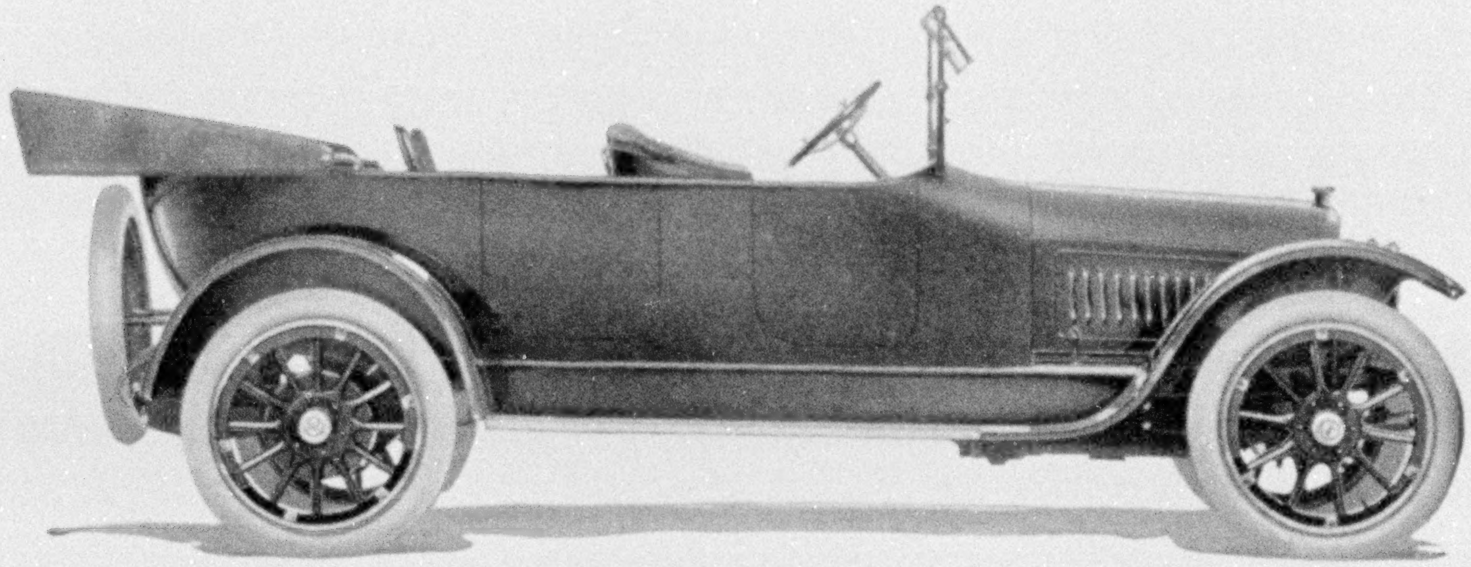
Kelly-Springfield

tires sold gave their full mileage *on the road,* without the slightest necessity for adjustment. In the rare instances where adjustments are required they are made on this basis:

Plain tread, 5,000 miles. Kant Slip tread, 6,000 miles. *In Ford sizes,* plain tread, 6,000 miles. Kant Slip tread, 7,500 miles.

Kelly-Springfield Tire Company
Akron, Ohio
Branches in all Principal Cities

646% Increase Tells the Story of
Nation-wide Chandler Demand



The Pioneer
Light-Weight Six

CHANDLER SIX $1295

Now With
7-Passenger Body

THE demand for the seven-passenger Chandler is sweeping the whole country. It's not a question of how many cars we can ***sell,*** but how many cars we can ***build.*** And we have reached a high mark attained by few manufacturers. We will supply seven-passenger Chandlers to ***ten thousand*** new owners this year, and even then thousands of men who place their orders late will have to be disappointed.

What is the reason for this tremendous growth in Chandler demand? Just ask yourself this question. The answer is obvious when you know the Chandler car.

It's simply because, regardless of price reductions, regardless of new models, there is no other car of such superior character selling at a similar price.

By all means, go see your Chandler dealer and get thoroughly posted on the Chandler. Go and see what a wonderful car this is, that sells for $1295

Bear in mind, too, that there isn't anything experimental about the Chandler. Bear in mind that thousands of Chandlers are on the road giving the most satisfying service to Chandler owners.

April shipments showed 233% increase over April, 1914
May shipments showed 493% increase over May, 1914
June shipments showed 646% increase over June, 1914

Roadster or Seven-Passenger Touring Car, $1295

See Your Dealer Now or Write for New Catalog

CHANDLER MOTOR CAR CO., 1407-1437 E. 131st St., CLEVELAND, OHIO, U. S. A.
New York City Office, 1890 Broadway
Cable Address, "Chanmotor"

Firestone
NON-SKID TIRES

BARNEY Oldfield's famous phrase, "Firestones are my only life insurance," is of interest to every car-owner by the proof it affords of Firestone safety and vitality under sternest trial.

You naturally infer that what Firestones will do for the men who grind out tire-life in racing tests, they will do for your demands of tour and daily travel.

Firestone Net Prices to Car-Owners

	Case Ro'nd Tread	Case Non-Skid	Grey Tube	Red Tube
30x3	$ 9.40	$10.55	$2.20	$2.50
30x3½	11.90	13.35	2.60	2.90
32x3½	13.75	15.40	2.70	3.05
34x4	19.90	22.30	3.90	4.40
34x4½	27.30	30.55	4.80	5.40
36x4½	28.70	32.15	5.00	5.65
37x5	35.55	39.80	5.95	6.70
38x5½	46.00	51.50	6.75	7.55

In the Firestone scale of values, low price is incidental—only quality is vital. Firestone prices are down to the level of ordinary tires because public recognition of Most Miles per Dollar gives us tremendous volume.

The efficiency and scope of the Firestone system of distribution cuts costs some more. Share in these industrial advantages. Your dealer has Firestones.

Firestone Tire and Rubber Company
"America's Largest Exclusive Tire and Rim Makers"
Akron, Ohio—Branches and Dealers Everywhere

6% Bonds

of a Fundamental Industry

We have published an interesting and comprehensive pamphlet on the bonds of Newsprint Paper Manufacturing Companies, showing the standards by which such bonds should be judged and their great desirability when issued in accordance with definite safeguards. If you are interested in sound six per cent bonds, ask for a copy of Circular No. **843 D.**

Peabody, Houghteling & Co.

(Established 1865) 10 So. La Salle St., Chicago

When National Banks Invest

they exercise every precaution known to long experience to secure bonds possessing safety and marketability.

Official Government reports show that the total of securities held for investment purposes by National Banks increased 24.5% from 1910 to 1914, whereas holdings of Public Utility Bonds increased 42.6% in the same period.

Banking Institutions are Shrewd Investors

and the evident trend of their purchases is toward such issues as have proven safe and profitable under the most drastic market conditions.

You can well afford to emulate the investment policies of great financial institutions. Let us send you a list of Public Utility Bonds which have been purchased for investment by some of the leading banking institutions of the country.

Circular AN-27 sent on request

N. W. Halsey & Co.

49 Wall Street, New York

Philadelphia Chicago San Francisco
Baltimore Boston St. Louis

All newly painted jobs look alike—for a while. Time reveals the house upon which

Zinc

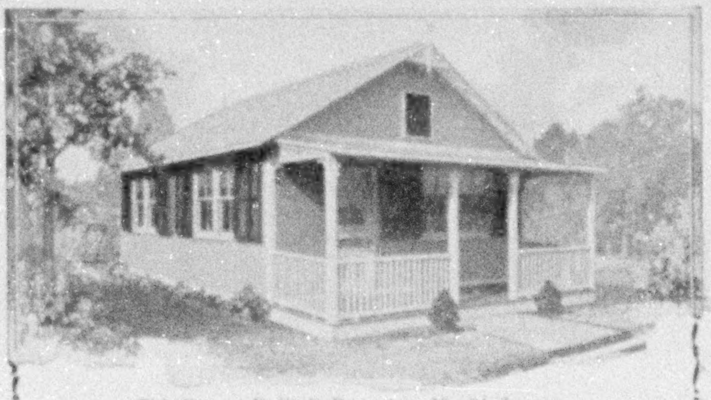
was used. Zinc in paint makes paint last.

If you want Zinc on your house, ask for our book, "Your Move," and act on it.

The New Jersey Zinc Company

Room 417, 55 Wall Street, New York

For big contract jobs consult our Research Bureau



This Bossert Redibilt Bungalow, 18 x 24, 3 rooms, $750 complete. Immediate delivery.

Bossert Redibilt Bungalows Solve Your Building Problems

No waiting for architects, contractors, or the expensive assembling and erecting of ready-cut lumber. A real revolution in home building. You can have a Bossert-Built Home up and ready to live in within a few days according to distance from our plant

Bossert Redibilt Homes

"Not Even a Nail to Buy"

Come ready fitted to the 1-64 of an inch. Painted in two colors—two coats (selected by owner). Can be erected by two men in a few days with nothing but a monkey-wrench. Sections built of heaviest lumber with air chambers between. Cool in Summer—warm in Winter. They are high-class permanent homes. Solid and substantial, as well as portable. Cost only 5 or 6 per cent of price to erect. Many beautiful homes ready for immediate delivery, and ranging in price from $300 up. All prices f. o. b. Brooklyn.

Store your household goods this year and get out into the green country. Buy a Bossert Redibilt home and set it up on some near-by site that may be rented for a trifle. Then count the cost in the fall and you will find a net cash balance over present living expenses and the usual vacation costs—and a fund of health and happiness besides.

Send for our illustrated catalog—it tells the whole story.

LOUIS BOSSERT & SONS

1313 Grand St. Brooklyn, N. Y.

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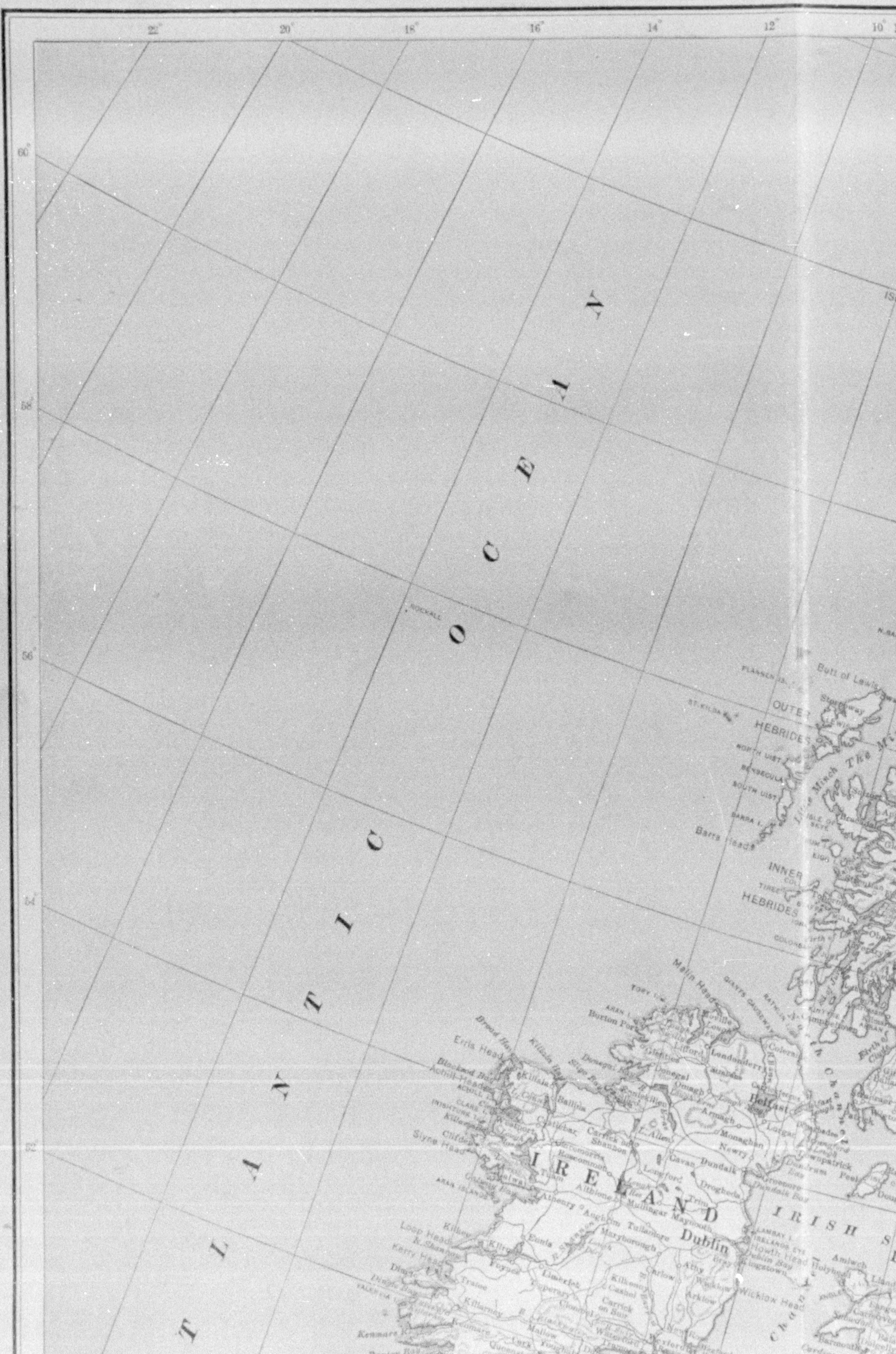
NEXT to fresh air and bread in the essentials of life comes cleanliness. And to most people this means the use of Ivory Soap.

Ivory Soap satisfies millions of families not only for the bath and toilet, but for nursery use, for particular laundry work, for washing dishes, for cleaning fine furnishings and for brightening up the house in general.

The work of Ivory Soap practically is unlimited because its mildness, purity, quality and freedom from alkali enable it to clean thoroughly—*and safely.*

IVORY SOAP. . . . . 99$\frac{44}{100}$% PURE

IVORY
IT FLOATS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BENBECULA
SOUTH UIST
BARRA I.
Barra Head
Little Minch
The Minch
ISLE OF SKYE
INNER HEBRIDES
TIREE
COLL
COLONSAY
Oban
Firth of Clyde
Malin Head
GIANTS CAUSEWAY
RATHLIN I.
North Channel
TORY I.
ARAN I.
Burton Port
Broad Haven
Killala Bay
Erris Head
Blacksod Bay
Achill Head
ACHILL I.
CLARE I.
INISHTURK I.
Killary
Clifden
Slyne Head
ARAN ISLANDS
Galway Bay
Donegal Bay
Sligo Bay
Donegal
Lifford
Londonderry
Coleraine
Omagh
Enniskillen
Belfast
Armagh
Monaghan
Newry
Downpatrick
Dundalk
Dundalk Bay
Ballina
Castlebar
Carrick on Shannon
Roscommon
Longford
Cavan
Drogheda
IRELAND
Athlone
Athenry
Mullingar
Maynooth
Tullamore
Dublin
Maryborough
Dublin Bay
Howth Head
Kingstown
LAMBAY I.
IRELANDS EYE
Bray
Athy
Carlow
Wicklow
Wicklow Head
Arklow
Kilkenny
Cashel
Carrick on Suir
Clonmel
Limerick
Tipperary
Ennis
Kilrush
Loop Head
Kerry Head
Tralee
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Kenmare
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Wexford
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IRISH SEA
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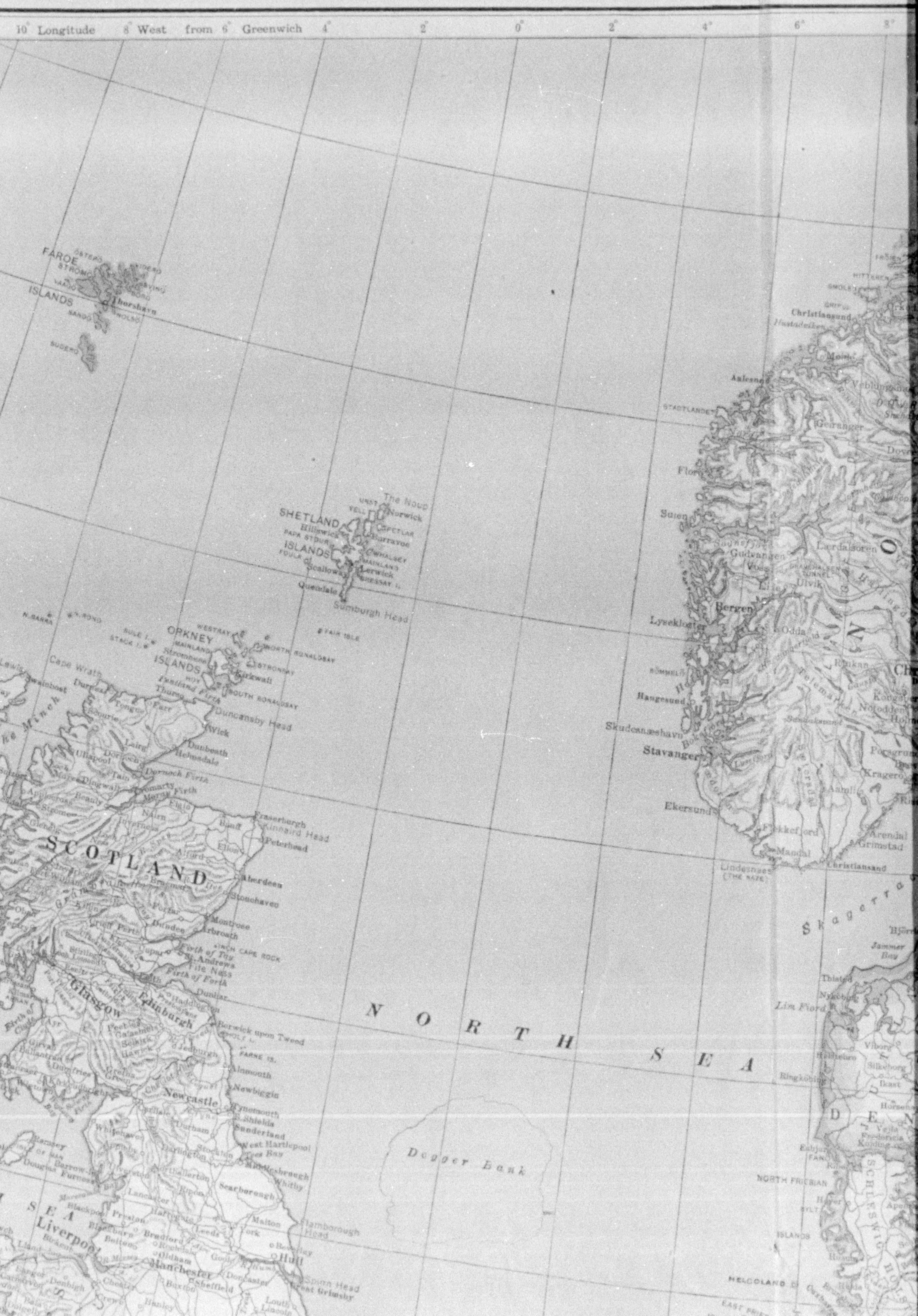
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SHETLAND ISLANDS
The Noup
Norwick
Hillswick
Burravoe
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SOUTH RONALDSAY
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Cape Wrath
Thurso
Duncansby Head
Wick
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Helmsdale
Ullapool
Dornoch Firth
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Moray Firth
Nairn
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SCOTLAND
Aberdeen
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INCH CAPE ROCK
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Dundee
Perth
Glasgow
Edinburgh
Dunbar
Berwick upon Tweed
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Alnmouth
Newbiggin
Newcastle
Tynemouth
S. Shields
Sunderland
West Hartlepool
Tees Bay
Middlesbrough
Whitby
Scarborough
Flamborough Head
Dumfries
Carlisle
Lancaster
Preston
Blackpool
Liverpool
Leeds
York
Manchester
Sheffield
Hull
Spurn Head
Great Grimsby
Dogger Bank
NORTH SEA
Aalesund
STADTLANDET
Christiansund
Geiranger
Floro
Sulen
Gudvangen
Voss
Laerdalsoren
Bergen
Lyseklaster
Odda
Haugesund
Skudesnaeshavn
Stavanger
Ekersund
Flekkefjord
Mandal
Lindesnaes (THE NAZE)
Christiansand
Arendal
Grimstad
Kragero
Notodden
Kongsberg
Skagerrak
Thisted
Lim Fiord
Viborg
Silkeborg
Ringkobing
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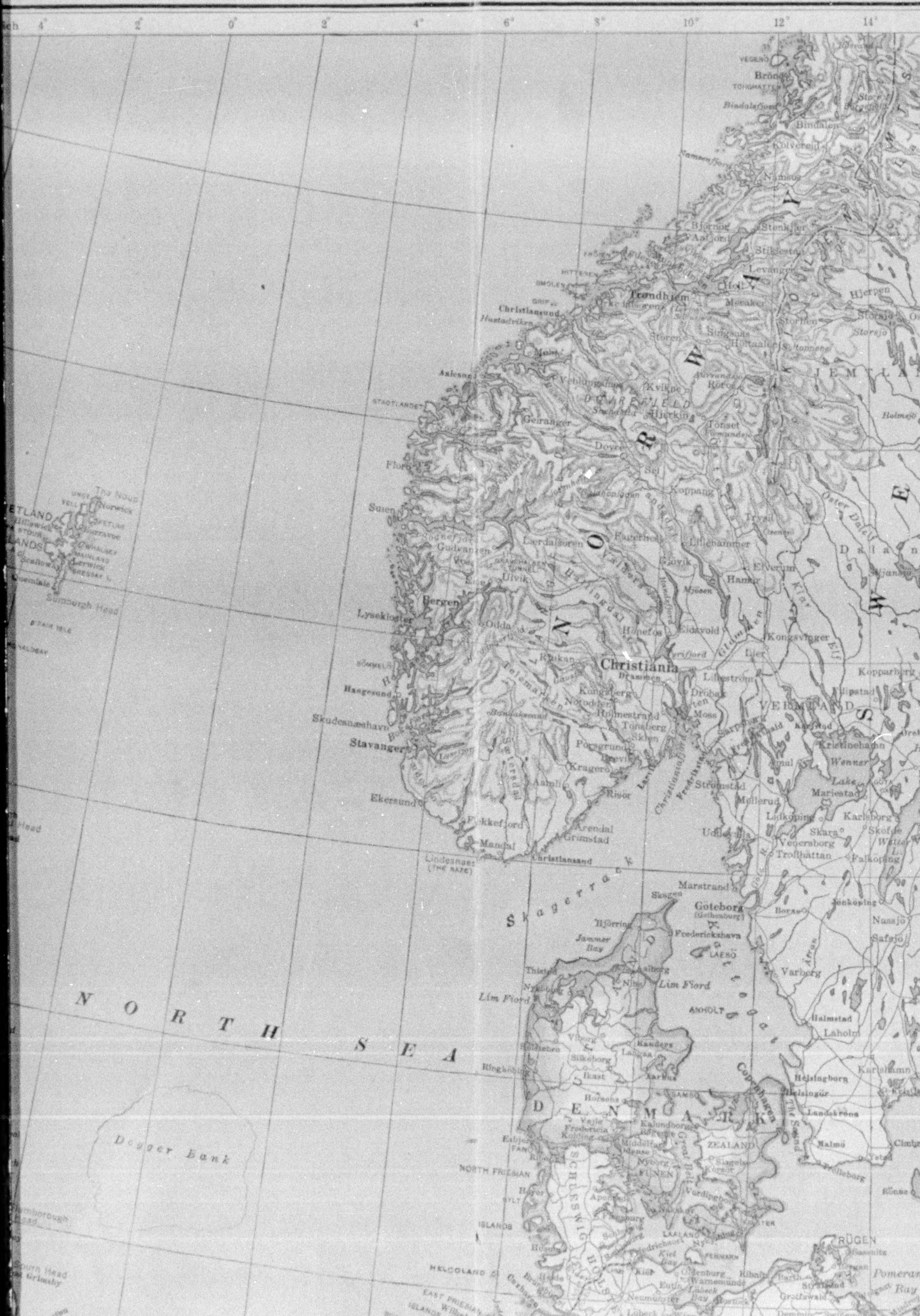4°
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Singsaas
Storlien
Storsjö
Jemtland
Florö
Suen
Lærdalsören
Fagernes
Lillehammer
Gjövik
Hamar
Elverum
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Moss
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Brevik
Kragerö
Risör
Arendal
Grimstad
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Mandal
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Ekersund
Stavanger
Skudesnaeshavn
Haugesund
Bömmelö
Telemarken
Rjukan
Hardanger
Hallingdal
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Karlstad
Kristinehamn
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Amal
Mariestad
Karlsborg
Strömstad
Mellerud
Lidköping
Skara
Vegersborg
Trollhattan
Falköping
Uddevalla
Kopparberg
Filipstad
Marstrand
Goteborg (Gothenburg)
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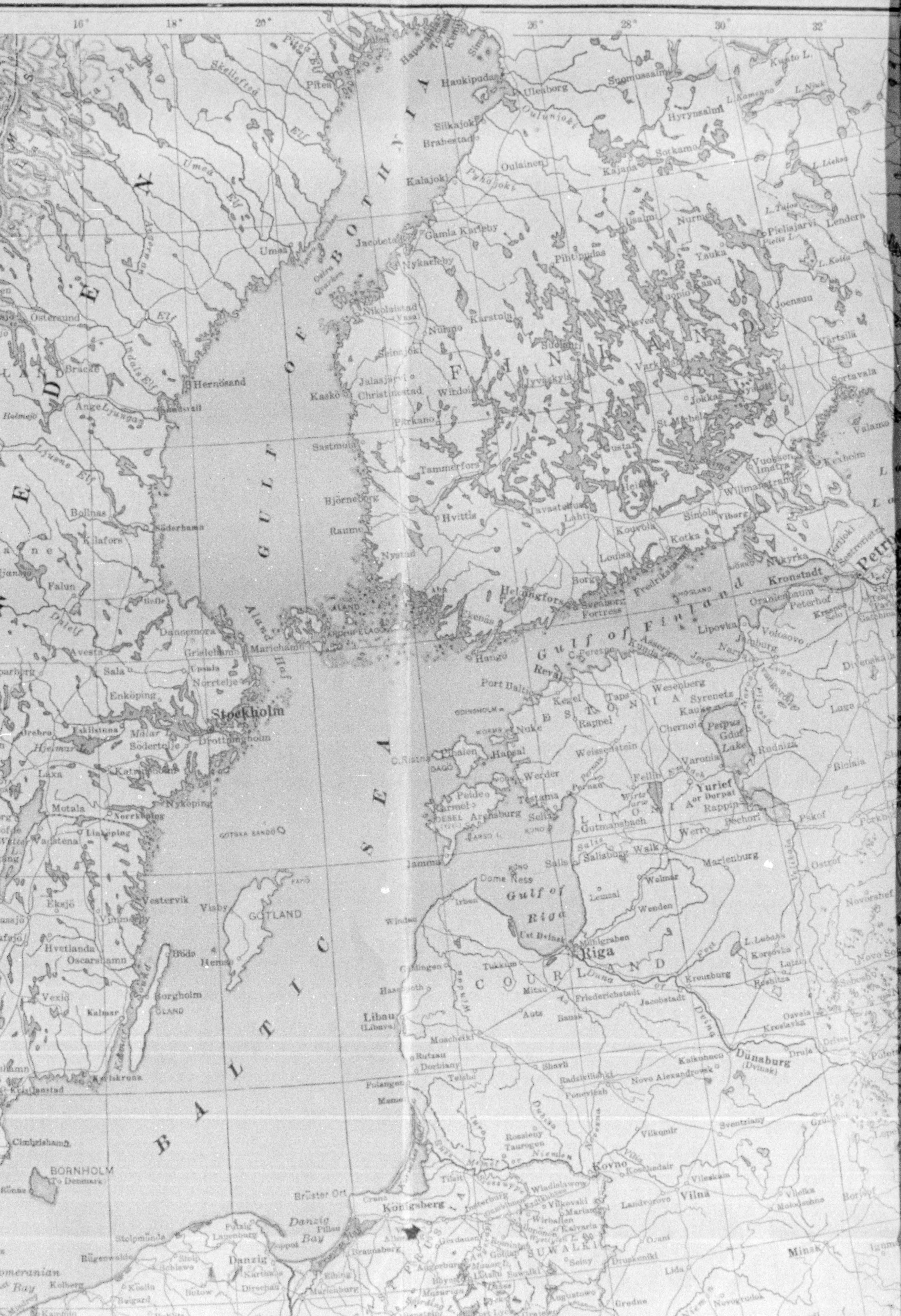
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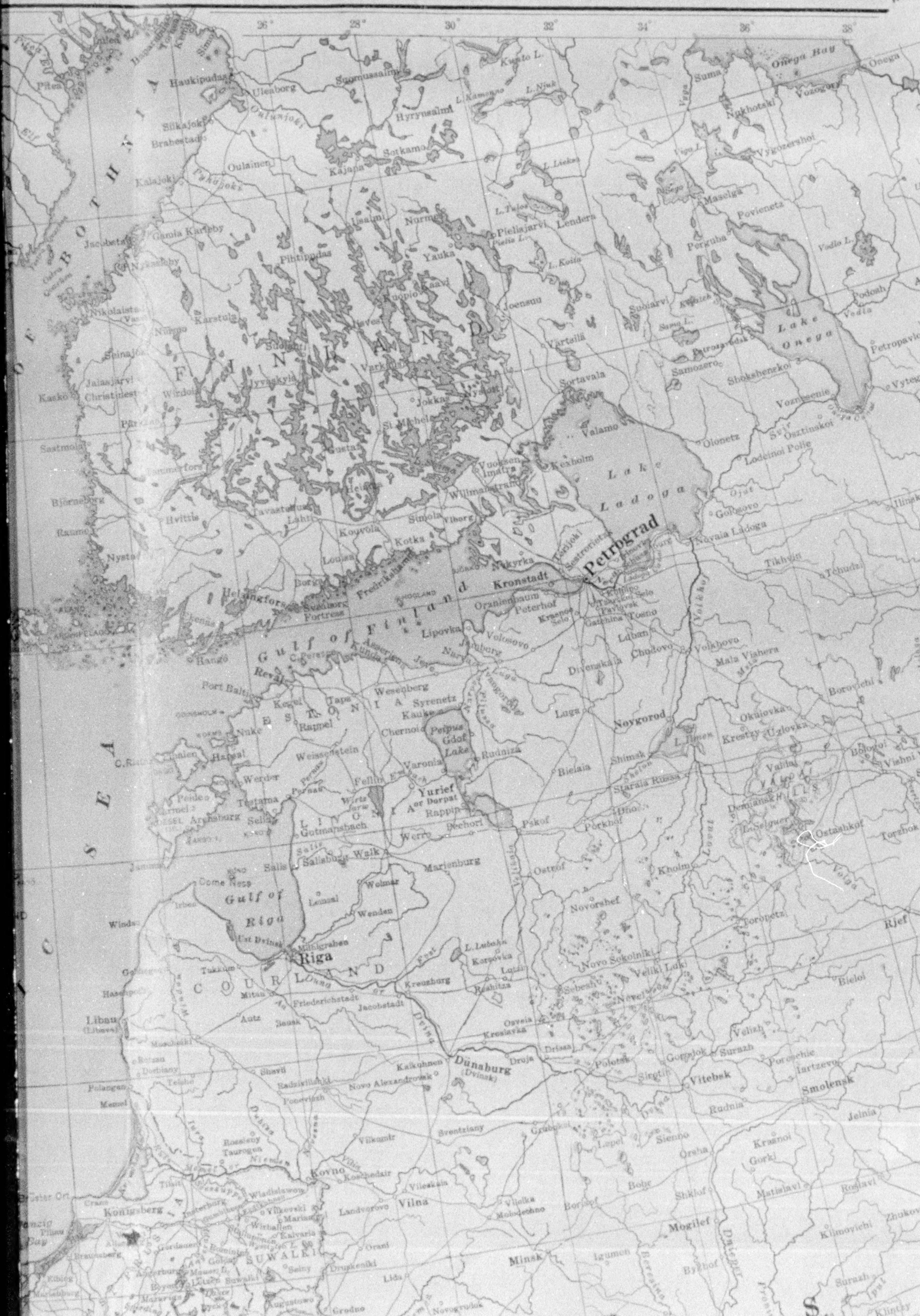
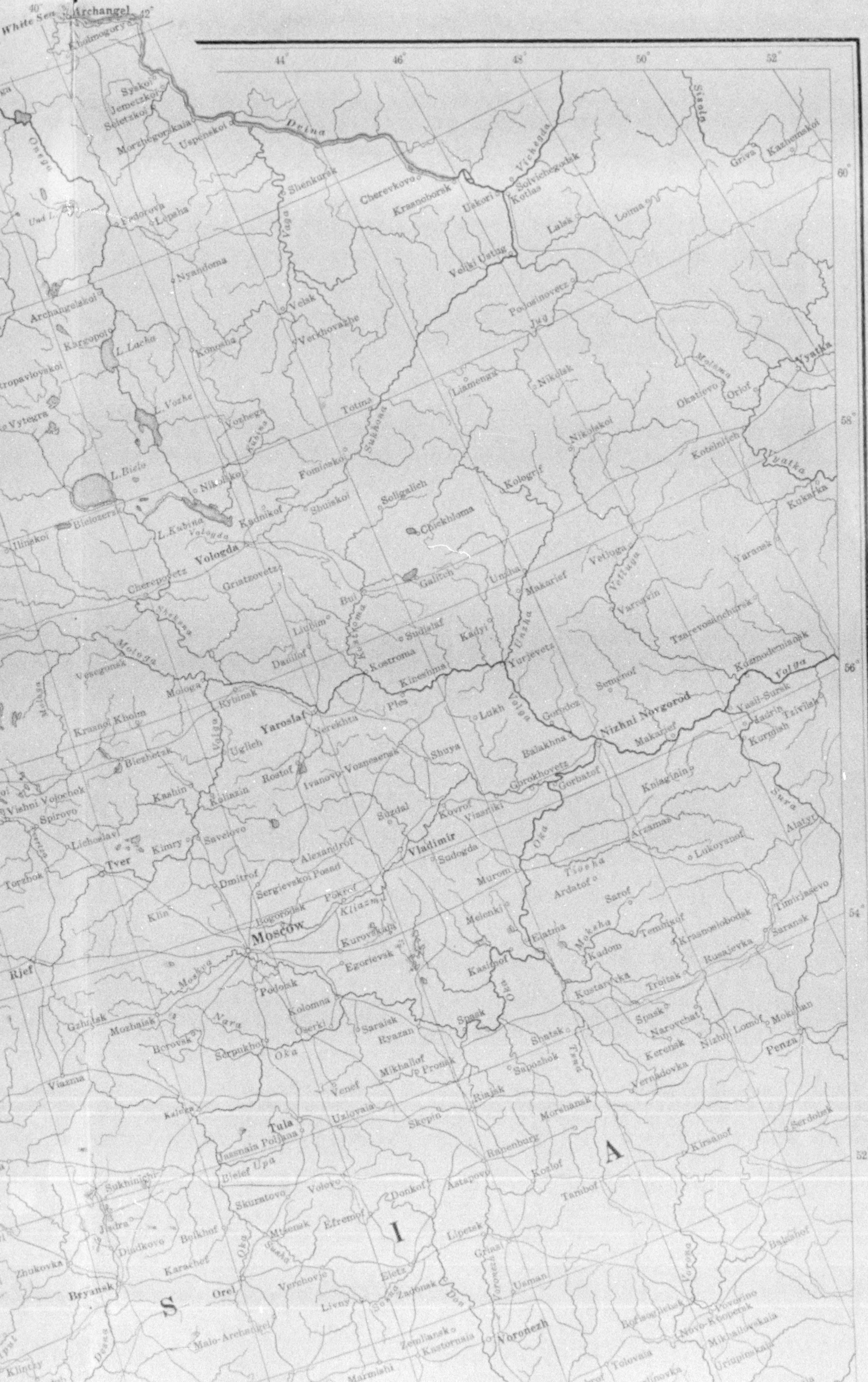
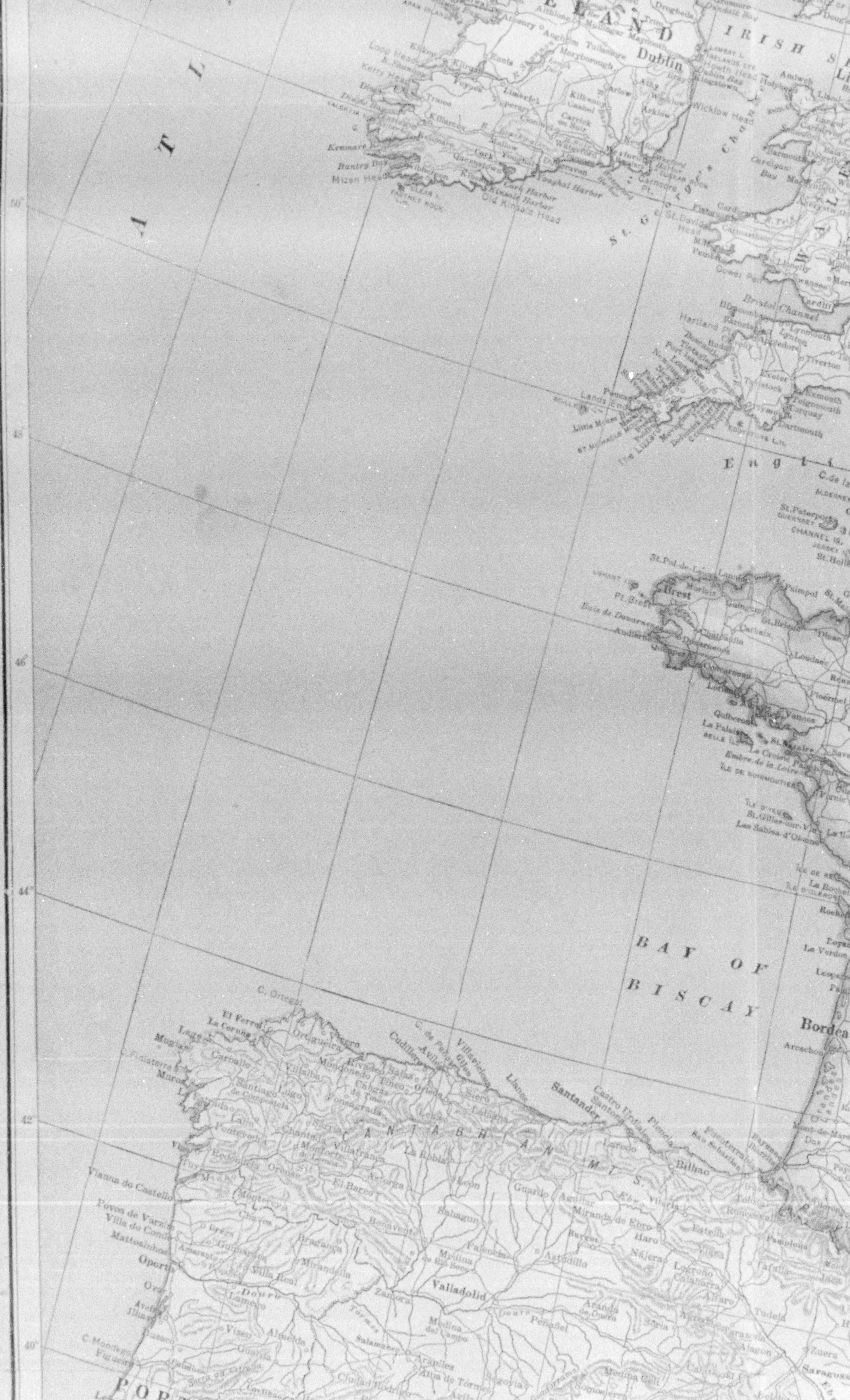
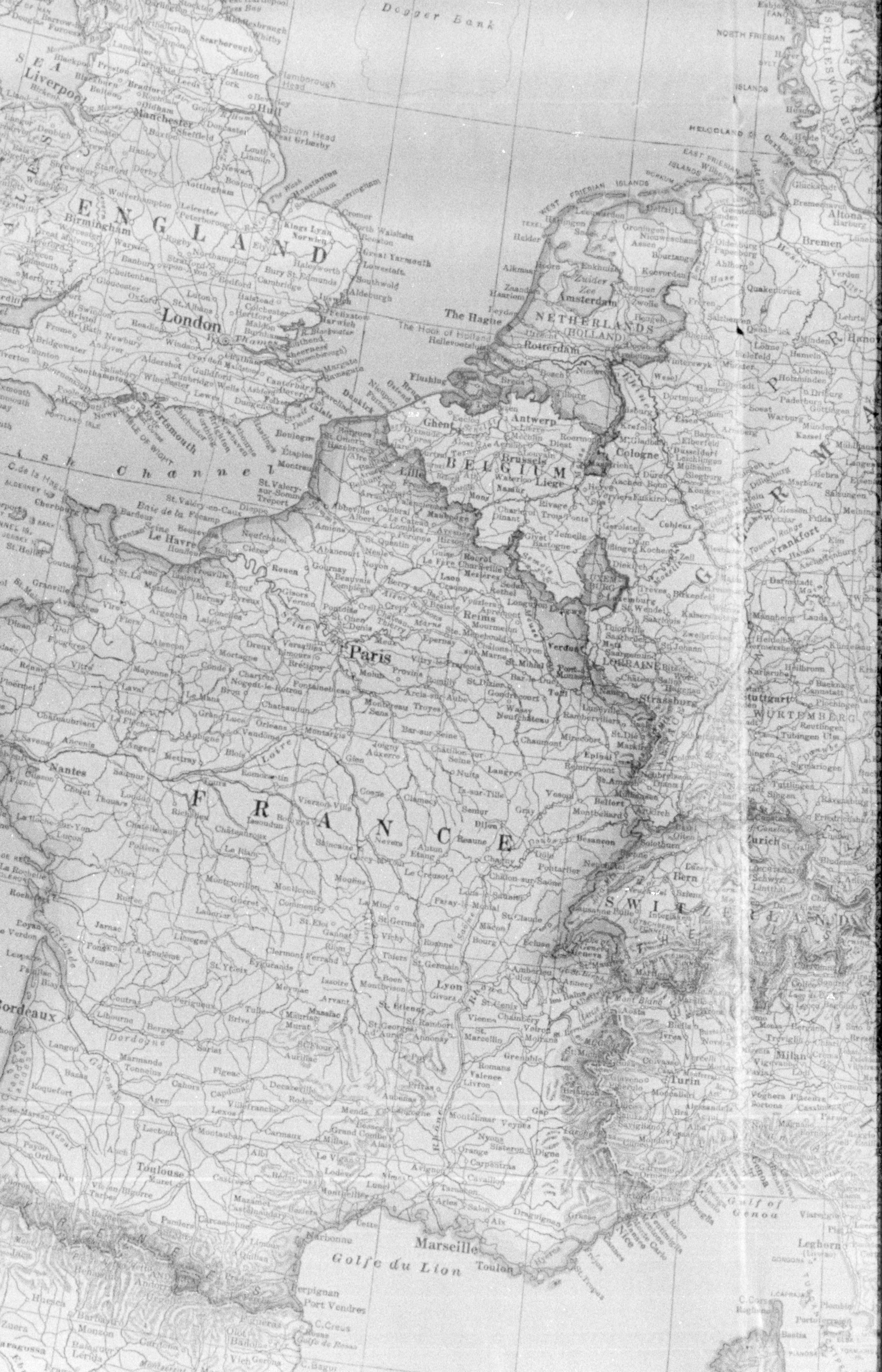
Haukipudas
Uleaborg
Oulunjoki
Suomussalmi
Kusto L.
L. Niuk
L. Kamanno
Hyrynsalmi
Piteå
Pite Elf
Skellefteå Elf
Umeå Elf
Silkajoki
Brahestad
Oulainen
Kajana
Sotkamo
L. Lieksa
Kalajoki
Pyhäjoki
Iisalmi
Nurmes
L. Tulos
Pielisjärvi
Lendera
Pielis L.
Gamla Karleby
Jacobstad
Umeå
Nykarleby
Pihtipudas
Yauka
L. Koita
Kuopio
Joensuu
Nikolaistad
Vasa
Nurmo
Karstula
Värtsilä
Östersund
Seinäjoki
Brazke
Hernösand
Jalasjärvi
Christinestad
Kaskö
Wirdois
Jyväskylä
Sortavala
Sundsvall
Ljungan
Indals Elf
Holmsjö
Parkano
Jokkas
Nyslott
St. Michel
Valamo
Sastmola
Ljusne Elf
Tammerfors
Gustaf
Vuoksen
Imatra
Kexholm
Björneborg
Heinola
Willmanstrand
Bollnas
Söderhamn
Hvittis
Tavastehus
Lahti
Simola
Viborg
Kilafors
Rauma
Kouvola
Kotka
Nystad
Louisa
Fredrikshamn
Björkö
Nykyrka
Kronstadt
Petrograd
Falun
Gefle
Åbo
Helsingfors
Borgå
Sveaborg Fortress
Hogland
Oranienbaum
Peterhof
Krasnoe Selo
Åland
Åland Archipelago
Åland Haf
Ekenäs
Hangö
Dalelf
Dannemora
Avesta
Grisslehamn
Marichamn
Sala
Upsala
Norrtelje
Reval
C. Surop
Kunda
Asserien
Narva
Jamburg
Volosovo
Lipovka
Port Baltic
Kegel
Taps
Wesenberg
Syrenetz
Enköping
Stockholm
Odinsholm
Nuke
Rappel
Kauks
Chernoi
Peipus Lake
Gdof
Rudnitza
Luga
Örebro
Eskilstuna
Mälar
Hjelmar
Södertelje
Drottningholm
Worms
C. Ristna
Dagö
Hapsal
Weissenstein
Varonia
Laxa
Katrineholm
Werder
Fellin
Yurief or Dorpat
Pernau
Peldeo
Testama
Ösel
Arensburg
Motala
Norrköping
Nyköping
Karmel
Rappin
Werro
Pechori
Linköping
Vadstena
Gotska Sandö
Kuno
Gutmannsbach
Salis
Salisburg
Walk
Marienburg
Jamma
Ostrof
Pskof
Dome Ness
Wolmar
Lemsal
Vestervik
Visby
Gotland
Fårö
Irben
Wenden
Eksjö
Vimmerby
Windau
Ust Dvinsk
Mühlgraben
Riga
Hvetlanda
Oscarshamn
Böda
Hemse
Goldingen
Tukkum
L. Lubana
Korsovka
Hasenpoth
Mitau
Friedrichstadt
Jacobstadt
Kreuzburg
Rezhitsa
Ludza
Sebesh
Vexiö
Borgholm
Öland
Kalmar
Libau (Libava)
Auts
Bausk
Oswela
Kraslavka
Drissa
Moschetki
Rutzau
Dorbiany
Shavli
Kalkuhnen
Dünaburg (Dvinsk)
Druja
Karlskrona
Kristianstad
Telshe
Radziviliski
Novo Alexandrovsk
Polangen
Memel
Ponevyezh
Svientziany
Cimbrishamn
Rossieny
Taurogen
Vilkomir
Bornholm
To Denmark
Rönne
Tilsit
Kovno
Koschedair
Brüster Ort
Cranz
Königsberg
Insterburg
Wladislawow
Vilkovaski
Mariampol
Wirballen
Kalvaria
Landvorovo
Vilna
Vileika
Molodechno
Danzig Bay
Pillau
Hela
Putzig
Lauenburg
Zoppot
Stolpmünde
Stolp
Schlawe
Bütow
Danzig
Rügenwalde
Kolberg
Pomeranian Bay
Köslin
Belgard
Kartaus
Dirschau
Elbing
Marienburg
Braunsberg
Gerdauen
Goldap
Angerburg
Lötzen
Suwalki
Seiny
Druskeniki
Oziani
Lida
Minsk
Augustowo
Grodno
Novogrudok
Masurian L.

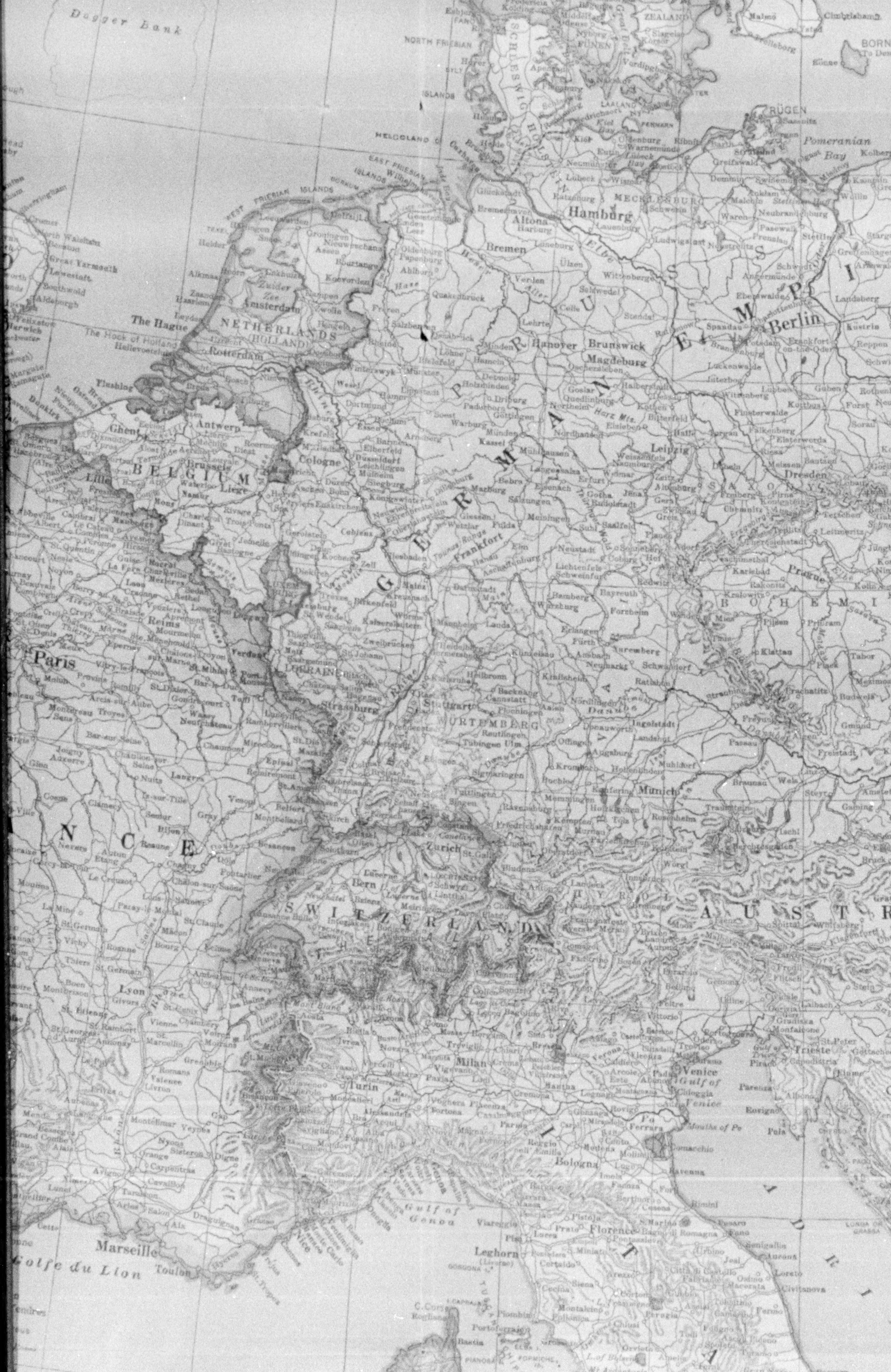
White
26°
28°
30°
32°
34°
36°
38°
GULF OF BOTHNIA
FINLAND
Uleaborg
Haukipudas
Suomussalmi
Hyrynsalmi
Kajana
Sotkamo
Brahestad
Siikajoki
Oulainen
Kalajoki
Gamla Karleby
Jacobstad
Nykarleby
Nikolaistad (Vasa)
Kaskö
Christinestad
Björneborg
Raumo
Nystad
Tammerfors
Tavastehus
Lahti
Kouvola
Kotka
Lovisa
Borgå
Helsingfors
Sveaborg Fortress
Ekenäs
Hangö
Fredrikshamn
Viborg
Simola
Villmanstrand
Vuoksen
Imatra
Kexholm
Sortavala
Valamo
Joensuu
Kuopio
Jyväskylä
St. Michel
Nyslott
Idensalmi
Nurmes
Pielisjärvi
Lendera
Lake Ladoga
Petrograd
Kronstadt
Oranienbaum
Peterhof
Krasnoe Selo
Tsarskoe Selo
Pavlovsk
Gatchina
Schlüsselburg
Novaia Ladoga
Tikhvin
Volkhov
Tosno
Luban
Chudovo
Volkhovo
Mala Vishera
Gulf of Finland
Lake Onega
Onega Bay
Onega
Suma
Nukhotski
Vozogory
Vygozershoi
Maselga
Povienetz
Perguba
Suoiarvi
Petrozavodsk
Samozero
Shokshenskoi
Voznesenie
Olonetz
Lodeinoi Polie
Podosh
Petropavlovsk
Vytegra
Valdai Hills
Demiansk
L. Seliger
Ostashkof
Volga
Torzhok
Rjef
Borovichi
Okulovka
Krestzy
Uglovka
Novgorod
L. Ilmen
Shimsk
Staraia Russa
Dno
Porkhof
Kholm
Luga
Vangorod
Narva
Jamburg
Volosovo
Lipovka
Reval
Port Baltic
Kegel
Tapa
Wesenberg
Rappel
Syrenetz
Kunda
ESTONIA
Hapsal
Pernau
Fellin
Yurief or Dorpat
Peipus
Pskof
Pechori
Werro
Walk
Wolmar
Wenden
Marienburg
Ostrof
LIVONIA
Arensburg
Gulf of Riga
Riga
Ust Dvinsk
Mühlgraben
Windau
Tukkum
Mitau
COURLAND
Libau (Libava)
Hasenpoth
Friederichstadt
Jacobstadt
Kreuzburg
Rezhitza
Lutsin
Dvina
Dünaburg (Dvinsk)
Druja
Drissa
Polotsk
Vitebsk
Nevel
Sebesh
Velikie Luki
Novorzhef
Novo Sokolniki
Toropetz
Bieloi
Velizh
Surazh
Smolensk
Gorodok
Rudnia
Jelnia
Krasnoi
Gorki
Orsha
Roslavl
Mstislavl
Mogilef
Bykhof
Shklof
Klimovichi
Minsk
Igumen
Borisof
Molodechno
Vilna
Landvarovo
Kovno
Vilkomir
Sventziany
Novo Alexandrovsk
Ponevesh
Shavli
Polangen
Memel
Tilsit
Königsberg
Pillau
Danzig Bay
Insterburg
Gumbinnen
Wirballen
Kalvaria
Suwalki
Grodno
Lida
Augustowo
Novogrudok

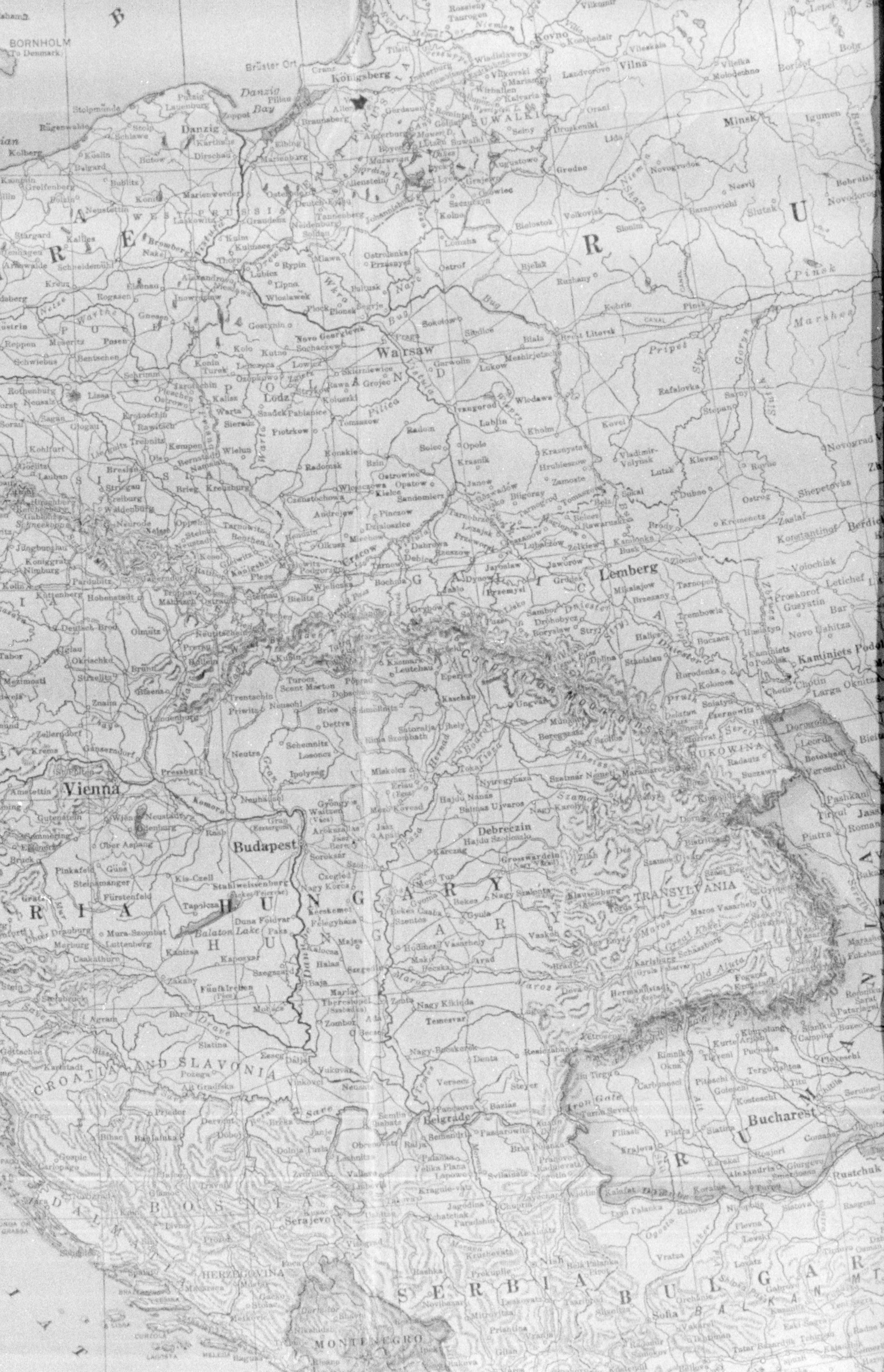


White Sea
Archangel
40°
42°
44°
46°
48°
50°
52°
60°
58°
56°
54°
52°
Kholmogory
Syskoi
Jemetzkoi
Seletzkoi
Morzhegorskaia
Uspenskoi
Dvina
Onega
Shenkursk
Cherevkovo
Krasnoborsk
Uskori
Solvichegodsk
Kotlas
Vichegda
Sisola
Griva
Kazhemskoi
Fedorova
Lepsha
Vaga
Lalsk
Loima
Veliki Ustiug
Nyandoma
Archangelskoi
Kargopol
L. Lacha
Konosha
Velsk
Verkhovazhe
Podosinovetz
Jug
Vyatka
Moloma
Orlof
Okatievo
Liamenga
Nikolsk
Petropavlovskoi
Vytegra
L. Vozhe
Voshega
Kubena
Totma
Sukhona
Nikolskoi
Kotelnitch
Vyatka
L. Bielo
Nikolskoi
Fominskoi
Kologrif
Kukarka
Bielozersk
Shuiskoi
Soligalich
Chukhloma
Ilinskoi
L. Kubina
Vologda
Kadnikof
Vologda
Cherepovetz
Griatzovetz
Galitch
Unzha
Makarief
Vetluga
Vetluga
Yaransk
Bui
Varnavin
Sheksna
Liubim
Kostroma
Sudislaf
Kadyi
Tzarevosanchursk
Mologa
Danilof
Kostroma
Kineshma
Yurjevetz
Unzha
Kozmodemiansk
Vesegonsk
Mologa
Rybinsk
Ples
Volga
Semenof
Vasil-Sursk
Jadrin
Tzivilsk
Kurmish
Krasnoi Kholm
Yaroslaf
Nerekhta
Lukh
Gorodetz
Nizhni Novgorod
Makarief
Volga
Uglich
Balakhna
Bieshetsk
Ivanovo-Voznesensk
Shuya
Rostof
Gorbatof
Kniaginin
Vishni Volochok
Kashin
Kaliazin
Gorokhovetz
Spirovo
Kovrof
Viazniki
Sura
Alatyr
Tvertza
Suzdal
Arzamas
Liehoslavl
Kimry
Savelovo
Vladimir
Lukoyanof
Tver
Alexandrof
Sudogda
Tiosha
Torzhok
Dmitrof
Sergievskoi Posad
Murom
Ardatof
Sarof
Timirjasevo
Pokrof
Kliasma
Klin
Bogorodsk
Melenki
Moksha
Temnikof
Krasnoslobodsk
Saransk
Moscow
Kurovskaia
Elatma
Kadom
Rjef
Moskva
Egorievsk
Kasimof
Ruzajevka
Podolsk
Kostarevka
Troitsk
Gzhatsk
Mozhaisk
Kolomna
Oka
Spask
Spask
Narovchat
Nizhni Lomof
Mokshan
Nara
Oserki
Saraisk
Ryazan
Borovsk
Serpukhof
Shatsk
Kerensk
Penza
Oka
Mikhailof
Pronsk
Sapozhok
Tsna
Viazma
Venef
Riajsk
Vernadovka
Kaluga
Tula
Uzlovaia
Skopin
Morshansk
Serdobsk
Jasnaia Poliana
Ranenburg
Kirsanof
Bielef
Upa
Koslof
A
Sukhinichi
Volovo
Donkof
Astapovo
Tambof
Skuratovo
Jisdra
Mtsensk
Efremof
Lipetsk
I
Diadkovo
Bolkhof
Oka
Zusha
Griasi
Vorona
Balashof
Zhukovka
Karachef
Eletz
Bryansk
Orel
Verchovje
Zadonsk
Don
Voronezh
Usman
S
Livny
Sosna
Borisoglebsk
Povorino
Novo-Khopersk
Malo-Archangelsk
Zemliansk
Kastornaia
Voronezh
Mikhailovskaia
Uriupinskaia
Desna
Klintsy
Marmishi
Tolovaia


A T L
50°
48°
46°
44°
42°
40°
IRELAND
IRISH SEA
Dublin
Kingstown
Wicklow Head
Athlone
Athenry
Mullingar
Maynooth
Drogheda
Tullamore
Maryborough
Kilkenny
Carlow
Athy
Arklow
Wexford
Carnsore Pt.
Waterford
Carrick on Suir
Limerick
Tralee
Killarney
Kenmare
Bantry Bay
Mizen Head
Cork
Cork Harbor
Kinsale Harbor
Old Kinsale Head
Youghal
Youghal Harbor
Mallow
Queenstown
Fastnet Rock
Loop Head
Kerry Head
St. George's Chan.
St. Davids Head
Cardigan
Cardigan Bay
Holyhead
Amlwch
Carmarthen
Llanelly
Swansea
Cardiff
Bristol Channel
Hartland Pt.
Lynmouth
Tiverton
Exeter
Tavistock
Exmouth
Teignmouth
Torquay
Dartmouth
Plymouth
Penzance
Lands End
Eddystone Lt.
The Lizard
English Channel
C. de la Hague
Alderney
St. Peterport
Guernsey
Channel Is.
Jersey
St. Helier
St. Pol de Léon
Ushant I.
Brest
Pt. St. Mathieu
Baie de Douarnenez
Audierne
Morlaix
Lannion
Paimpol
St. Brieuc
Dinan
Carhaix
Châteaulin
Douarnenez
Quimper
Concarneau
Loudéac
Rennes
Ploërmel
Lorient
Vannes
Quiberon
La Palais
Belle Île
St. Nazaire
Le Croisic
Embre. de la Loire
Île de Noirmoutier
Île d'Yeu
St. Gilles-sur-Vie
Les Sables d'Olonne
Île de Ré
La Rochelle
Île d'Oléron
Rochefort
Royan
Le Verdon
Pauillac
Bordeaux
Arcachon
Mont-de-Marsan
Dax
Bayonne
Fuenterrabia
San Sebastian
BAY OF BISCAY
C. Ortegal
El Ferrol
La Coruña
Lage
Mugia
C. Finisterre
Muros
Santiago de Compostela
Lugo
Carballo
Villalba
Mondoñedo
Rivadeo
Vivero
Ortigueira
Tineo
Cangas de Tineo
Avilés
Gijon
Oviedo
Villaviciosa
Llanes
Santander
Santoña
Castro Urdiales
Laredo
Bilbao
Plencia
C. de Peñas
Cudillero
CANTABRIAN MTS.
Pontevedra
Lalin
Chantada
Monforte de Lemos
Villafranca
Ponferrada
La Robla
Astorga
León
Orense
El Barco
Vigo
Tuy
Redondela
Vianna do Castello
Povoa de Varzim
Villa do Conde
Mattosinhos
Oporto
Ovar
Aveiro
Ilhavo
C. Mondego
Figueira
Braga
Guimarães
Amarante
Chaves
Bragança
Villa Real
Mirandella
Lamego
Vizeu
Guarda
Almeida
Monterey
Benavente
Sahagun
Guardo
Aguilar
Miranda de Ebro
Vitoria
Burgos
Haro
Nájera
Logroño
Calahorra
Alfaro
Tudela
Estella
Pamplona
Tafalla
Roncesvalles
Tolosa
Palencia
Astudillo
Medina de Rio Seco
Zamora
Valladolid
Douro
Peñafiel
Aranda de Duero
Soria
Tarazona
Alagon
Zuera
Saragossa
Medina del Campo
Salamanca
Arapiles
Alba de Tormes
Ciudad Rodrigo
Segovia
Avila
Medina Celi
Somosierra
PORT


Dogger Bank
NORTH FRIESIAN ISLANDS
SCHLESWIG HOLSTEIN
HELGOLAND
EAST FRIESIAN ISLANDS
WEST FRIESIAN ISLANDS
Scarborough
Whitby
Flamborough Head
Liverpool
Manchester
Leeds
York
Hull
Sheffield
Spurn Head
Great Grimsby
Nottingham
Birmingham
ENGLAND
Norwich
Great Yarmouth
Lowestoft
Cambridge
Harwich
London
Thames
Dover
Canterbury
Brighton
Portsmouth
Southampton
ISLE OF WIGHT
Channel
Cherbourg
Le Havre
Rouen
Dieppe
Boulogne
Calais
Dunkirk
Ostend
Flushing
Ghent
Antwerp
Brussels
BELGIUM
Liege
Namur
Lille
Mons
Maubeuge
The Hague
Rotterdam
NETHERLANDS (HOLLAND)
Amsterdam
Zuider Zee
Leeuwarden
Groningen
Helder
The Hook of Holland
Bremen
Altona
Osnabrück
Cologne
Düsseldorf
Aachen
Bonn
Coblenz
Frankfort
Mainz
Darmstadt
Mannheim
Heidelberg
Karlsruhe
Stuttgart
WURTEMBERG
Strassburg
LORRAINE
Metz
GERMANY
Amiens
St. Quentin
Laon
Reims
Soissons
Sedan
Verdun
Nancy
Toul
Epinal
Belfort
Mulhausen
Paris
Versailles
Seine
Marne
Chartres
Orleans
Le Mans
Tours
Loire
Nantes
Angers
Blois
Troyes
Dijon
Besancon
FRANCE
Bourges
Nevers
Limoges
Poitiers
La Rochelle
Rochefort
Clermont Ferrand
Vichy
Lyon
St. Etienne
Grenoble
Bordeaux
Gironde
Dordogne
Garonne
Toulouse
Montauban
Albi
Nimes
Avignon
Montpellier
Arles
Marseille
Toulon
Golfe du Lion
Narbonne
Perpignan
Port Vendres
Carcassonne
Pyrenees
Andorra
Lerida
Zurich
Basel
Bern
SWITZERLAND
Geneva
Mont Blanc
ALPS
Turin
Milan
Genoa
Gulf of Genoa
Nice
Monaco
Leghorn
Corsica
Bastia


Dogger Bank
NORTH FRIESIAN ISLANDS
HELGOLAND
EAST FRIESIAN ISLANDS
WEST FRIESIAN ISLANDS
SCHLESWIG
HOLSTEIN
ZEALAND
FÜNEN
RÜGEN
Pomeranian Bay
MECKLENBURG
Hamburg
Altona
Bremen
Lübeck
Berlin
Hanover
Brunswick
Magdeburg
Leipzig
Dresden
SAXONY
Prague
BOHEMIA
The Hague
NETHERLANDS
(HOLLAND)
Amsterdam
Rotterdam
Zuider Zee
Flushing
Antwerp
Ghent
Brussels
BELGIUM
Liège
Lille
Cologne
Düsseldorf
Elberfeld
Coblenz
Frankfort
Mainz
Kassel
GERMAN EMPIRE
PRUSSIA
BAVARIA
Nuremberg
Munich
Augsburg
Stuttgart
WÜRTEMBERG
Strassburg
LORRAINE
Metz
Verdun
Reims
Paris
Danube
FRANCE
Zurich
Bern
Lucerne
SWITZERLAND
ALPS
TYROL
AUSTRIA
Innsbruck
Trieste
Milan
Turin
Venice
Gulf of Venice
Mouths of Po
Bologna
Florence
Leghorn
Lyon
Marseille
Toulon
Nice
Gulf of Genoa
Golfe du Lion
ADRIATIC
ITALY


BORNHOLM
(To Denmark)
Danzig Bay
Königsberg
Danzig
Kolberg
Stolpmünde
Brüster Ort
Tilsit
Kovno
Vilna
Minsk
Igumen
Bobruisk
Suwalki
Grodno
Lida
Novogrudok
Nesvij
Slutsk
Baranovichi
Slonim
Volkovisk
Bielostok
WEST PRUSSIA
Marienwerder
Graudenz
Bromberg
Thorn
Allenstein
Lyck
Augustowo
Lomsha
Ostrolenka
Pultusk
Mlawa
Plock
Wloclawek
Posen
Gnesen
Warsaw
Novo Georgievsk
Sochaczew
Lowicz
Skierniewice
Grojec
Lodz
Kalisz
Sieradz
Piotrkow
Radom
Kielce
Sandomierz
Ivangorod
Lublin
Kholm
Wlodawa
Brest Litovsk
Kobrin
Pinsk
Pripet
Marshes
Kovel
Rafalovka
Vladimir-Volynsk
Lutsk
Klevan
Rovno
Dubno
Ostrog
Shepetovka
Novograd Volynsk
Zaslaf
Konstantinof
Berdichev
Proskorof
Letichef
Kaminiets Podolsk
Chotin
Larga
Okniza
Brody
Sokal
Zamoste
Krasnystaw
Hrubieszow
Tomaszow
Rawaruska
Zolkiew
Jaworow
Lemberg
Grodek
Przemysl
Jaroslaw
Tarnow
Rzeszow
Cracow
Bochnia
Wieliczka
Podgorze
Dunajec
Sambor
Drohobycz
Stryj
Dniester
Halicz
Stanislau
Tarnopol
Trembowla
Buczacz
Czortkow
Kolomea
Horodenka
Czernowitz
Sereth
BUKOWINA
Radautz
Suczawa
Dorohoi
Botoshani
Pashkani
Jassy
Roman
Piatra
Bakau
Marasheshti
Fokshani
Rimnik Sarat
Buzeu
Ploeshti
Campina
Bucharest
Giurgevo
Rustchuk
Alexandria
Turnu Magurele
Craiova
Kalafat
Turnu Severin
Iron Gate
Tirgu Jiu
Slatina
Pitesti
Kurtea de Arjesh
Rimnik
Sinaia
RUMANIA
Carpathian Mountains
Ungvar
Munkacs
Beregszasz
Nagy Szollos
Marmaros Sziget
Szatmar Nemeti
Nagy Karoly
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Nyiregyhaza
Debreczin
Grosswardein
Klausenburg
Maros Vasarhely
TRANSYLVANIA
Bistritz
Torda
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Fogaras
Arad
Temesvar
Szegedin
Hodmezo Vasarhely
Csaba
Gyula
Bekes
Nagy Kikinda
Zombor
Theresiopel
Baja
Kalocsa
Kecskemet
Czegled
Szolnok
Budapest
Waitzen
Gran
Esztergom
Raab
Komorn
Pressburg
Neutra
Trentschin
Lemberg
Kaschau
Eperjes
Bartfeld
Kesmark
Poprad
Leutschau
Miskolcz
Tokay
Satoralja Ujhely
Erlau
Losoncz
Schemnitz
Neusohl
Dobschau
Vienna
Wiener Neustadt
Oedenburg
Steinamanger
Stuhlweissenburg
Balaton Lake
Kanizsa
Fünfkirchen
Mohacs
Szegszard
Paks
Duna Foldvar
Kaposvar
Agram
Drave
Save
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Theiss
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HUNGARY
AUSTRIA
CROATIA AND SLAVONIA
Essek
Vukovar
Vinkovci
Pozega
Alt Gradiska
Bosna
BOSNIA
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Bihac
Doboj
Dolnja Tuzla
Zvornik
Serajevo
Visegrad
Foca
Mostar
HERZEGOVINA
DALMATIA
Gospic
Carlopago
Zengg
Spalato
Ragusa
Cattaro
MONTENEGRO
Podgorica
Cetinje
Belgrade
Semendria
Pancsova
Versecz
Weisskirchen
Bazias
Neusatz
Peterwardein
Semlin
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Obrenovatz
Valjevo
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Zajecar
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Krushevatz
Alexinatz
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Mitrovitza
Prishtina
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Gleiwitz
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Troppau
Teschen
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Olmütz
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Iglau
Znaim
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Kolin
Königgrätz
Pardubitz
Jungbunzlau
Görlitz
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Glogau
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Morava
Timok
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Una
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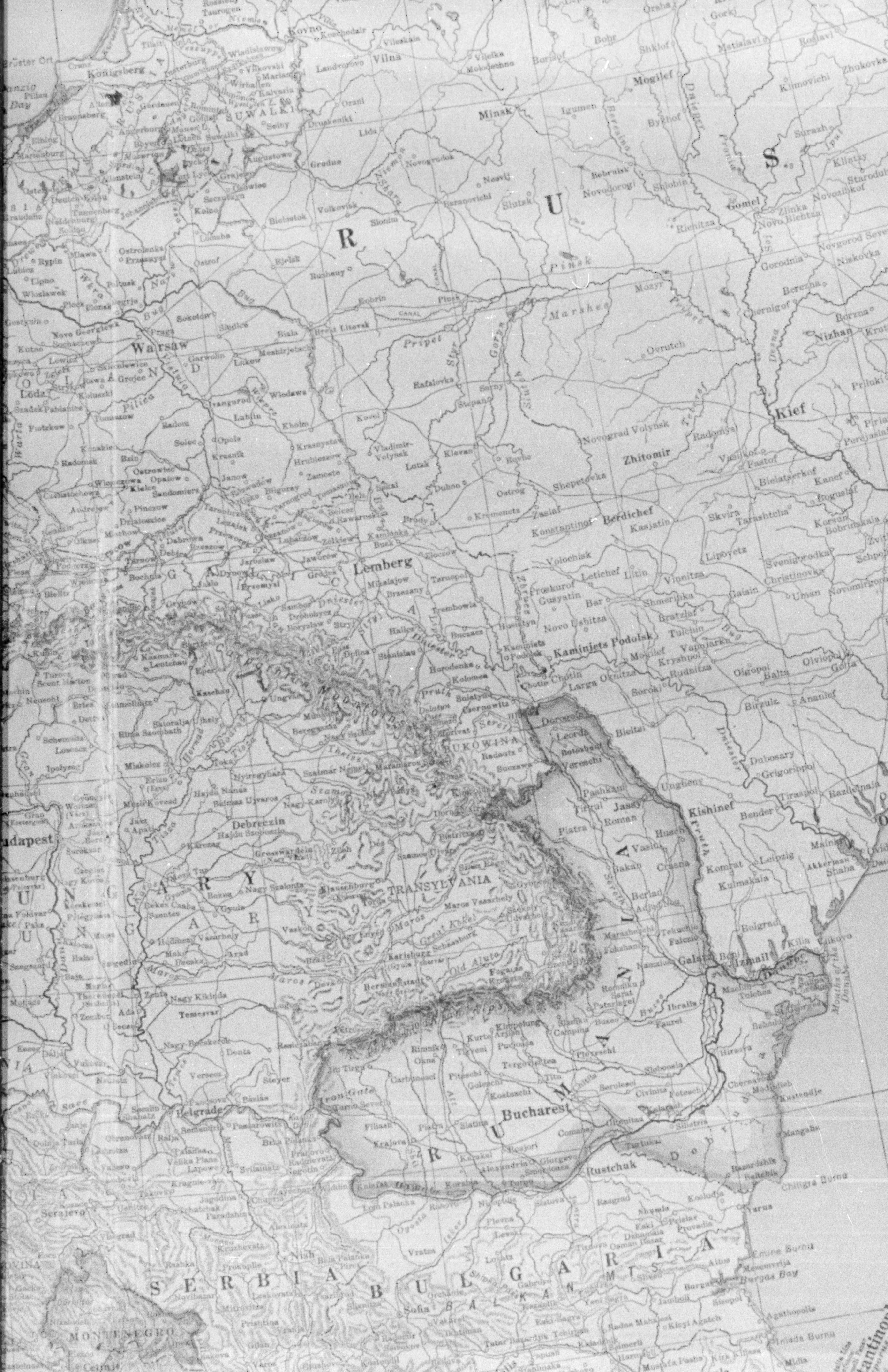
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Pinsk Marshes
Brest Litovsk
Warsaw
Lodz
Ivangorod
Lublin
Kholm
Kovel
Rovno
Dubno
Brody
Zhitomir
Berdichef
Kief
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Przemysl
Jaroslaw
Tarnopol
Stanislau
Czernowitz
Bukowina
Kaminiets Podolsk
Kishinef
Jassy
Galatz
Ismail
Akkerman
Bender
Tiraspol
Carpathian Mountains
Dniester
Pruth
Bug
Pripet
Dnieper
Vistula
Budapest
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Grosswardein
Klausenburg
Transylvania
Szegedin
Temesvar
Hermannstadt
Kronstadt
Belgrade
Bucharest
Ploiesti
Braila
Constantza
Rustchuk
Sofia
Varna
Burgas Bay
Serajevo
Nish
Iron Gate
Danube
Mouths of the Danube
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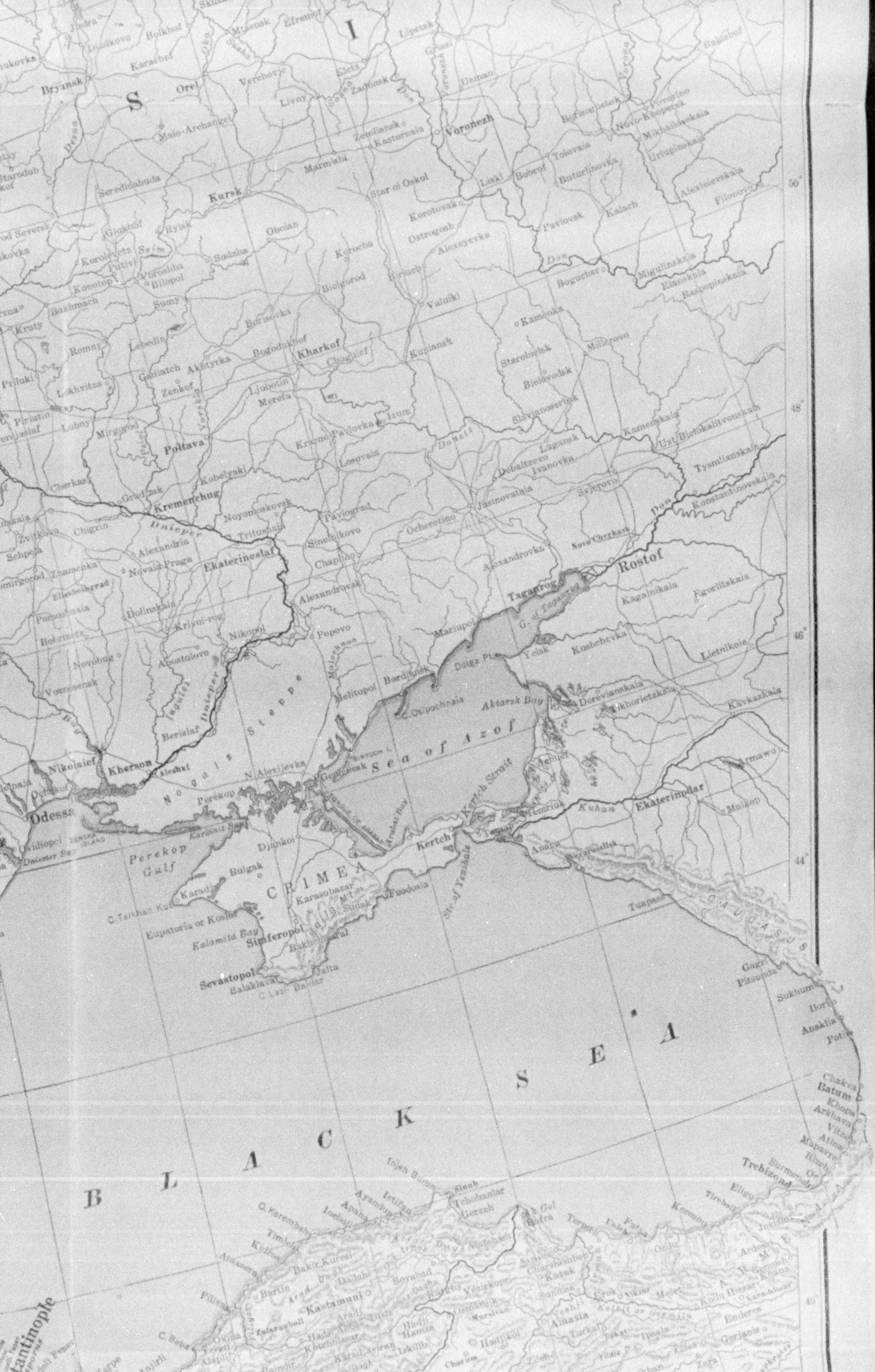
S E R B I A
B U L G A R I A
BALKAN MTS
MONTENEGRO
Dobruja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Odessa
Rostof
Taganrog
Novo Cherkask
Mariupol
Melitopol
Perekop
Simferopol
Sevastopol
Kertch
Feodosia
Ekaterinodar
Batum
Trebizond
Kastamuni
Amasia
Elets
Efremof
Lipetsk
Zadonsk
Livny
Usman
Bobrof
Pavlovsk
Kalach
Boguchar
Millerovo
Starobielsk
Bielovodsk
Kupiansk
Izum
Valuiki
Biriuch
Bielgorod
Korocha
Oboian
Sudzha
Rylsk
Glukhof
Konotop
Sumy
Lebedin
Romny
Priluki
Lubny
Mirgorod
Zenkof
Akhtyrka
Bogodukhof
Chuguief
Merefa
Ljubotin
Krasnograd
Pavlograd
Sinelnikovo
Alexandrovsk
Nikopol
Krivoi-rog
Alexandria
Chigrin
Novaia Praga
Dolinskaia
Elisabethgrad
Novomirgorod
Voznesensk
Berislaf
Aleshki
Ochakof
Ovidiopol
Tendra Island
Dniester B.
Dnieper
Don
Donets
Bug
Seim
Kuban
Perekop Gulf
Karkinit Bay
Nogais Steppe
Sea of Azof
G. of Taganrog
Aktarsk Bay
Kertch Strait
Str. of Yenikale
Yeisk
Kushchevka
Lugansk
Debaltzevo
Jasinovataia
Bakhmut
Kamenskaia
Ust Bielokalitvenskaia
Konstantinovskaia
Tysmlianskaia
Kagalnikskaia
Egorlitskaia
Lietnikoie
Kavkazskaia
Armavir
Maikop
Temriuk
Taman
Anapa
Novorossiisk
Tuapse
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Gagri
Pitsunda
Sukhum
Anaklia
Poti
Chakva
Khopa
Arkhava
Rizeh
Surmeneh
Eleyu
Tireboli
Kerasun
Ordu
Fatsa
Unieh
Terme
Samsun
Bafra
Sinob
Ineboli
Amasra
Bartin
Filiyas
C. Baba
Djankoi
Bulgak
Karasubazar
Sudak
Bakhchisarai
Jalta
Balaklava
C. Laspi
Eupatoria or Koslof
Kalamita Bay
C. Tarkhan Kut
CRIMEA
Jaila Mts.
Genichesk
Arabat Spit
Popovo
Berdiansk
C. Obitochnaia
Dolga Pt.
Starodub
Novgorod Seversk
Putivl
Malo-Archangelsk
Karachef
Bolkhof
Mtsensk
Star. Oskol
Kastornaia
Zemliansk
Liski
Korotoyak
Ostrogosh
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Mikhailovskaia
Uriupinskaia
Alexeievskaia
Filonovo
Borisoglebsk
Balashof
Migulinskaia
Elanskaia
Raspopinskaia
Kamenka
Slavianoserbsk
Ivanovka
Ocheretino
Alexandrovka
Derevianskaia
Tikhorietskaia
BLACK SEA
Constantinople
Ak Dagh
Tosia
Osmanjik
Vezirkopri
Zileh
Tokat
Niksar
Kara Hissar
Endereh
Gumush Khana
Jeviziik
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50°
48°
46°
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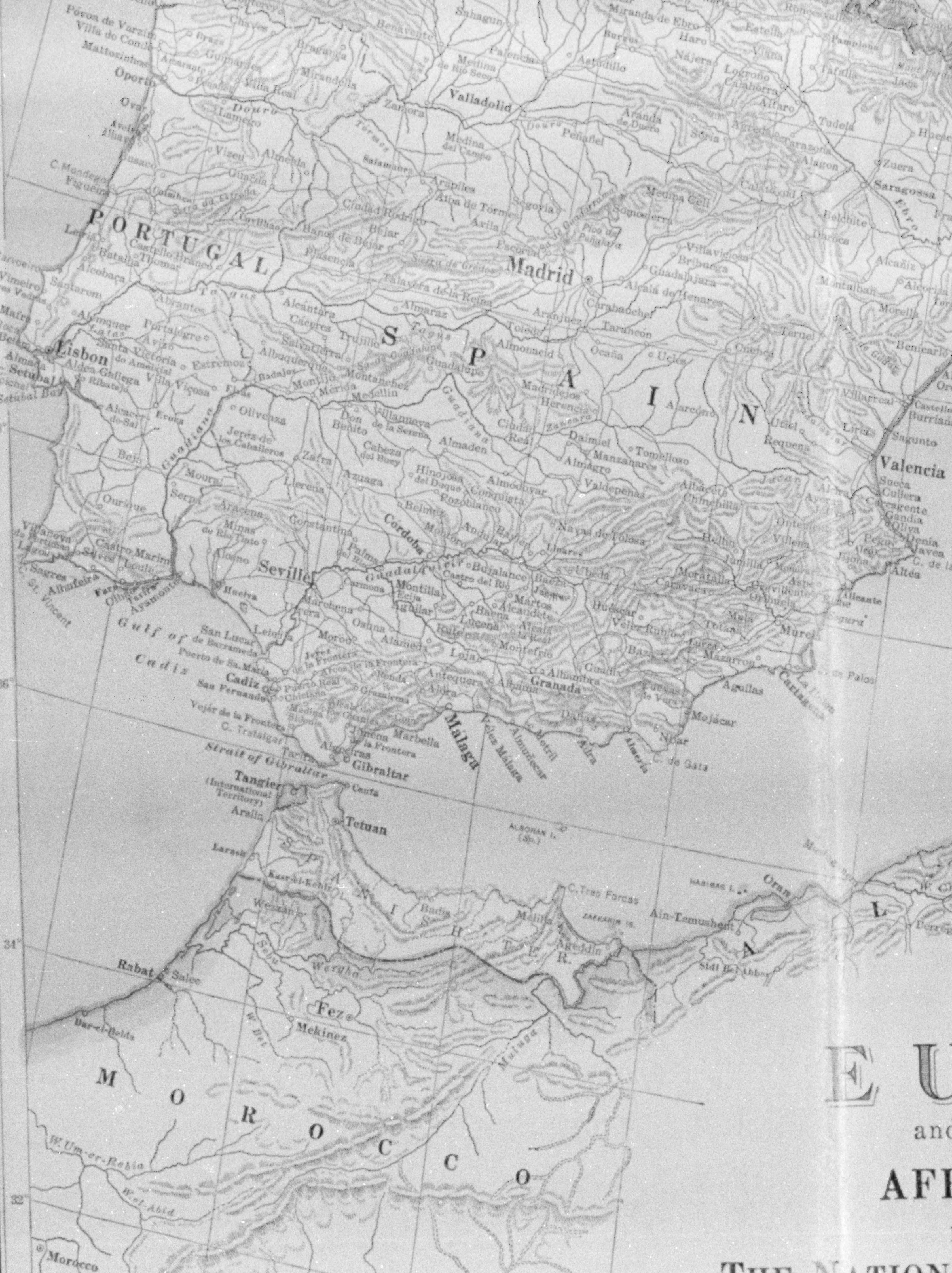
40°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Valladolid
Saragossa
Valencia
Seville
Cordoba
Granada
Malaga
Cadiz
San Fernando
Gibraltar
Strait of Gibraltar
Gulf of Cadiz
Tangier (International Territory)
Ceuta
Tetuan
Rabat
Salee
Fez
Mekinez
Morocco
Melilla
Oran
C. Tres Forcas
Alboran I. (Sp.)
Murcia
Cartagena
Almeria
C. de Gata
C. St. Vincent
Huelva
Douro
Tagus
Guadiana
Guadalquivir
Ebro
W. Um-er-Rebia
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40°
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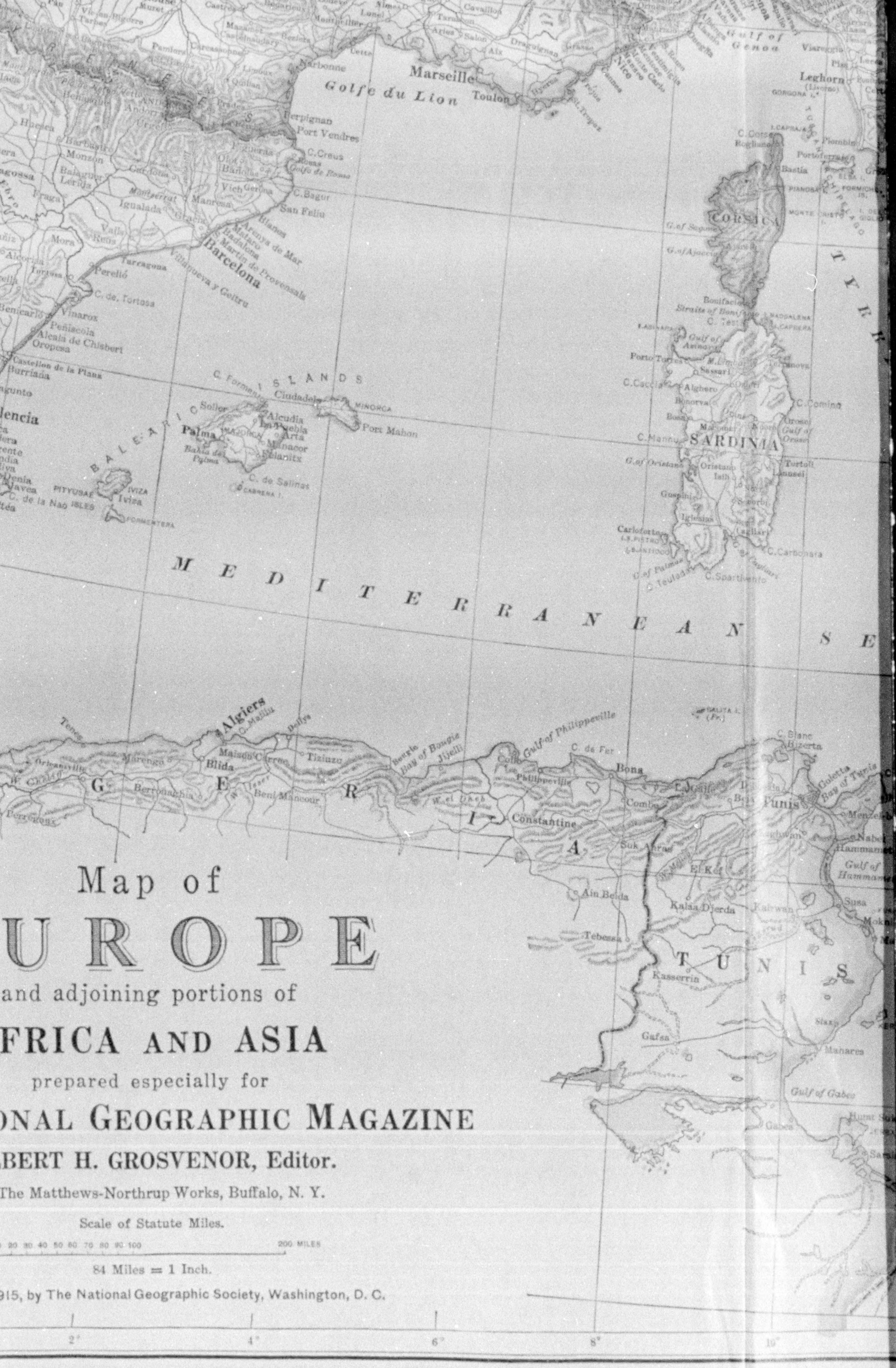
EU
and
AF
THE NATION
GILBE
by The
EXPLANATION:
Railroads thus: . . . .
Ship Canals thus: . .
0 10 20 30
Copyright, 1915,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Toulon
Narbonne
Perpignan
Port Vendres
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Golfe de Rosas
C. Bagur
San Feliu
Barcelona
Villanueva y Geltru
Tarragona
Perelló
C. de Tortosa
Vinaroz
Peñiscola
Alcala de Chisbert
Oropesa
Castellon de la Plana
Burriana
Valencia
Denia
C. de la Nao
Lerida
Monzon
Barbastro
Huesca
Igualada
Manresa
Vich
Gerona
Reus
Andorra
Nice
Gulf of Genoa
Leghorn (Livorno)
Piombino
Bastia
Elba I.
Monte Cristo I.
C. Corso
Corsica
G. of Sagone
G. of Ajaccio
Ajaccio
Bonifacio
Straits of Bonifacio
Maddalena
Caprera
Gulf of Asinara
Porto Torres
Sassari
Alghero
C. Caccia
Bonorva
Bosa
C. Comino
Orosei
Gulf of Orosei
C. Mannu
SARDINIA
G. of Oristano
Oristano
Tortoli
Lanusei
Iglesias
Cagliari
Carloforte
S. Pietro
S. Antioco
G. of Palmas
C. Teulada
C. Spartivento
C. Carbonara
BALEARIC ISLANDS
C. Formentor
Soller
Alcudia
La Puebla
Arta
Manacor
Felanitx
Palma
Bahia de Palma
Mallorca
C. de Salinas
Cabrera I.
Minorca
Ciudadela
Port Mahon
Iviza
Pityusae Isles
Formentera
MEDITERRANEAN SE
Galita I. (Fr.)
Algiers
C. Matifu
Dellys
Tenes
Orleansville
Marengo
Blida
Tizi uzu
Bougie
Bay of Bougie
Jijelli
Gulf of Philippeville
C. de Fer
Philippeville
Bona
Constantine
Beni Mancour
ALGERIA
Suk Arras
Ain Beida
Tebessa
C. Blanc
Bizerta
Goletta
Bay of Tunis
Tunis
Beja
El Kef
Kalaa Djerda
Kairwan
Susa
Nabel
Hammamet
Gulf of Hammamet
TUNIS
Kasserrin
Gafsa
Sfax
Mahares
Gulf of Gabes
Gabes
2°
4°
6°
8°
10°

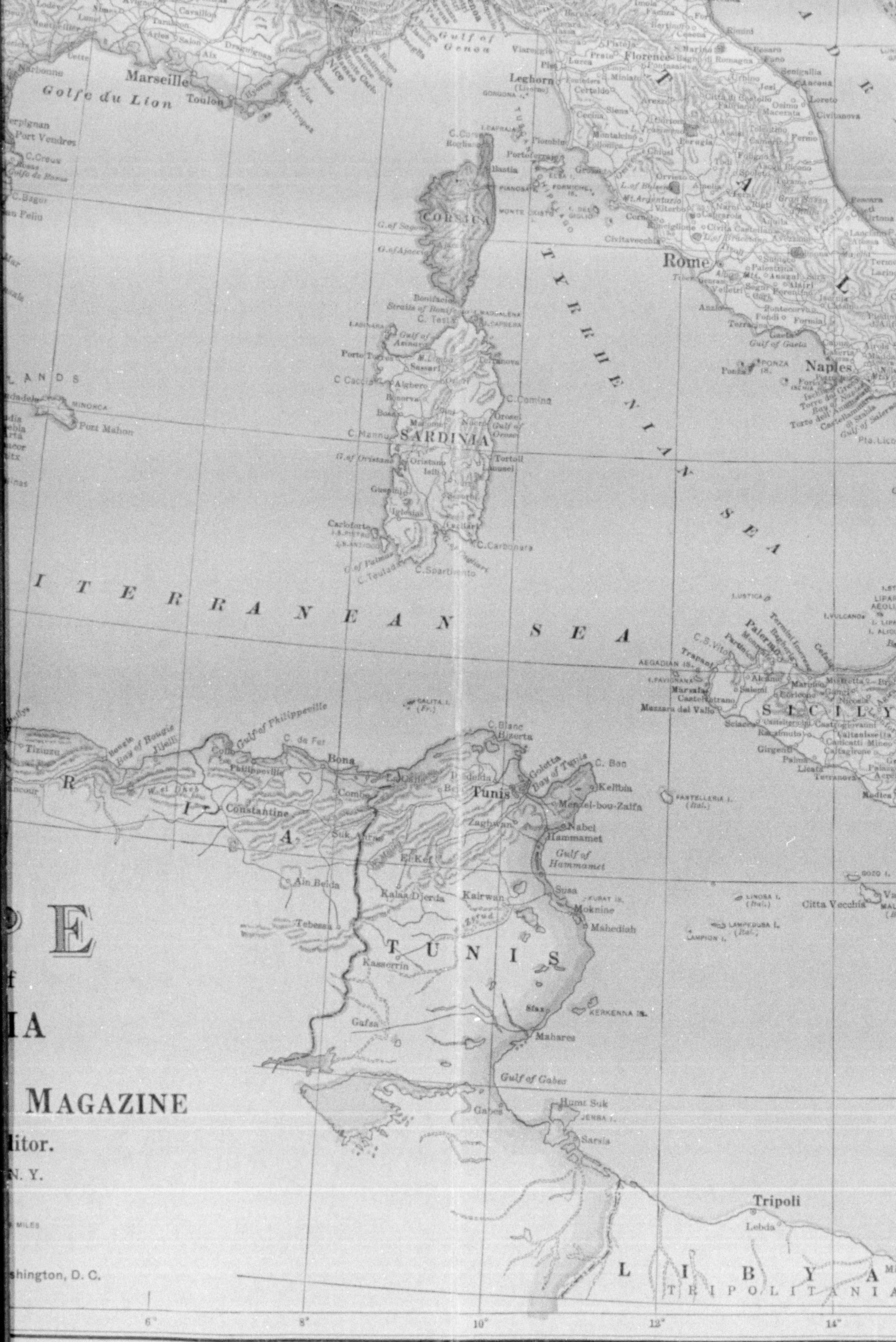
Map of
UROPE
and adjoining portions of
FRICA AND ASIA
prepared especially for
ONAL GEOGRAPHIC MAGAZINE
BERT H. GROSVENOR, Editor.
The Matthews-Northrup Works, Buffalo, N. Y.

Scale of Statute Miles.

20 30 40 50 60 70 80 90 100
200 MILES

84 Miles = 1 Inch.

915, by The National Geographic Society, Washington, D. C.



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Toulon
Nice
Golfe du Lion
Perpignan
Port Vendres
C. Creus
Gulf of Genoa
Leghorn
Florence
Pisa
Lucca
Siena
Perugia
Rome
Civitavecchia
Naples
Gulf of Gaeta
Ponza
Bastia
CORSICA
G. of Sagone
G. of Ajaccio
Bonifacio
Straits of Bonifacio
C. Testa
Porto Torres
Sassari
Alghero
C. Caccia
Terranova
C. Comino
SARDINIA
Orosei
Gulf of Orosei
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TYRRHENIAN SEA
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Gulf of Philippeville
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Jijelli
C. de Fer
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Bay of Tunis
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Kelibia
Menzel-bou-Zalfa
Nabel
Hammamet
Gulf of Hammamet
Zaghwan
El Kef
Suk Ahras
Kalaa Djerda
Kairwan
Susa
Moknine
Mahedia
TUNIS
Kasserin
Gafsa
Sfax
KERKENNA IS.
Mahares
Gulf of Gabes
Gabes
Humt Suk
JERBA I.
Sarsis
Tripoli
Lebda
LIBYA
TRIPOLITANIA
PANTELLERIA I. (Ital.)
LINOSA I. (Ital.)
LAMPEDUSA I. (Ital.)
LAMPION I.
AEGADIAN IS.
Trapani
Marsala
Mazzara del Vallo
Palermo
C. S. Vito
Alcamo
Castelvetrano
Sciacca
Girgenti
Licata
Terranova
SICILY
Caltanissetta
Caltagirone
USTICA I.
I. VULCANO
GOZO I.
Citta Vecchia
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8°
10°
12°
14°

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N. Y.

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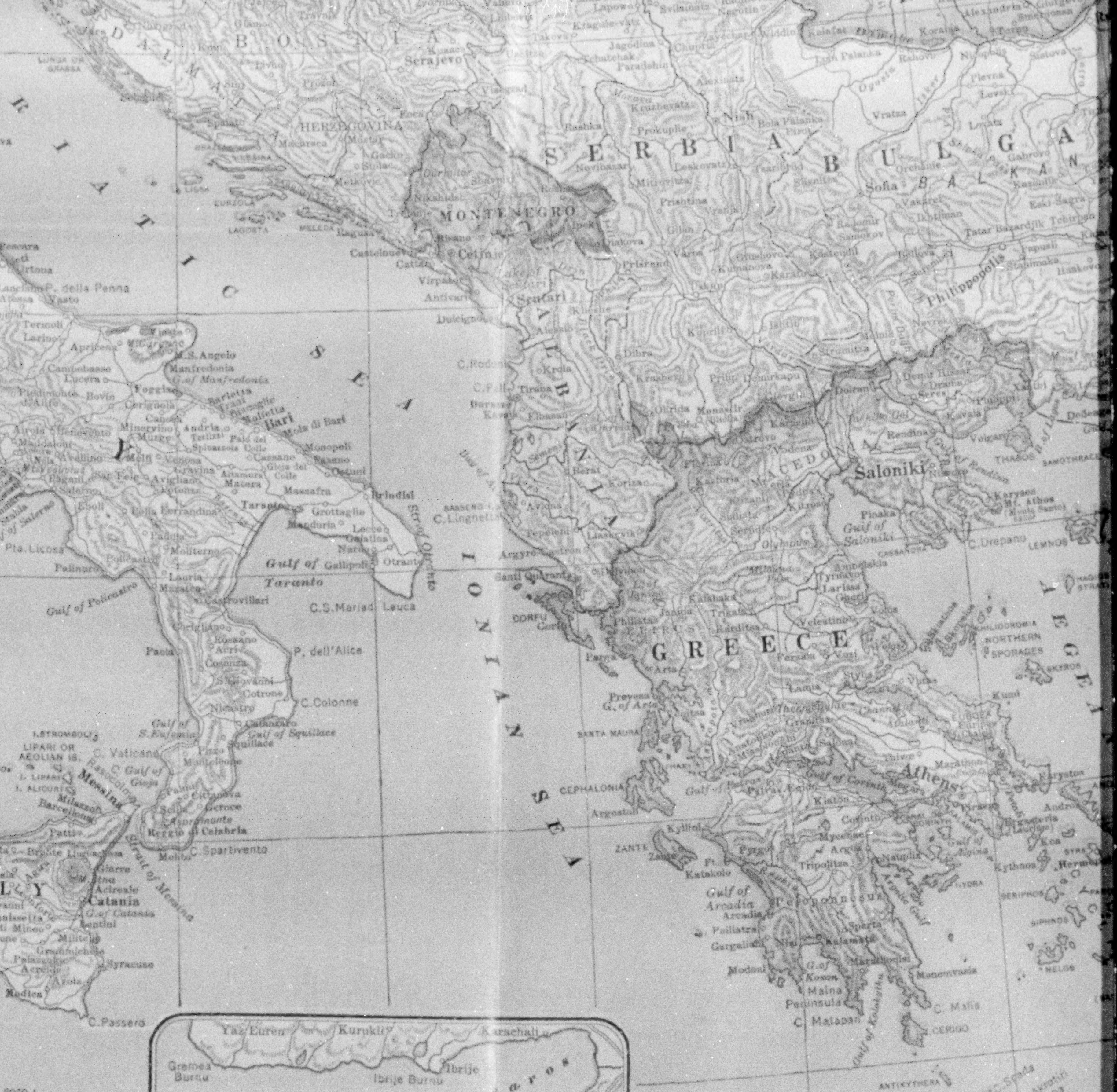
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Durazzo
Valona
MACEDONIA
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Gulf of Saloniki
GREECE
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Peloponnesus
Corfu
Cephalonia
Zante
Santa Maura
IONIAN SEA
Bari
Brindisi
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Taranto
Gulf of Taranto
Foggia
Manfredonia
Gulf of Manfredonia
Salerno
Gulf of Salerno
Gulf of Policastro
C. S. Maria di Leuca
P. dell'Alice
C. Colonne
Catanzaro
Gulf of Squillace
Gulf of S. Eufemia
C. Vaticano
LIPARI OR AEOLIAN IS.
I. STROMBOLI
Messina
Strait of Messina
Reggio di Calabria
C. Spartivento
Catania
Syracuse
C. Passero
Modica
GOZO I.
Valetta
MALTESE IS. (Br.)
Strait of Otranto
Gulf of Corinth
Gulf of Patras
Gulf of Arcadia
Gulf of Kolokythia
C. Matapan
C. Malia
CERIGO
ANTIKYTHERA
Kalamata
Sparta
Tripolitza
Corinth
Larissa
Volo
Lamia
Chalcis
EUBOEA
NORTHERN SPORADES
THASOS
SAMOTHRACE
LEMNOS
Mt. Athos
Gulf of Rendina
C. Drepano
Kavala
Drama
Seres
Monastir
Ochrida
Uskub
Kossovo
Prisrend
Kustendil
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Candia
Kisamo Kasteli
Sphakia
Retimo
GAVDOPULO
GAVDO
AEGEAN
MEDI
Ras Sem
Dernah
Ras el Tin
Gulf of Bomba
Tokra
Bengazi
Kasr Benigdem
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24°
Yaz Euren
Kuruklir
Karachali
Gremea Burnu
Ibrije
Ibrije Burnu
Gulf of Saros
Bulair
Sea of Marmora
Gallipoli
Gallipoli Peninsula
Suvla Burnu
Anafarta
Little Anafarta Bay
Lapsaki
Chardak
Dardanelles
Maidos
Kilid Bahr
Chanak Kalessi
(Kale Sultanie)
Krithia
Sedd-el-Bahr
Helles Burnu
Kum Kalessi
Kum Kale
Yeni Shehr
Dumbrek
Ruins of Troy and Ilium
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Tenedos
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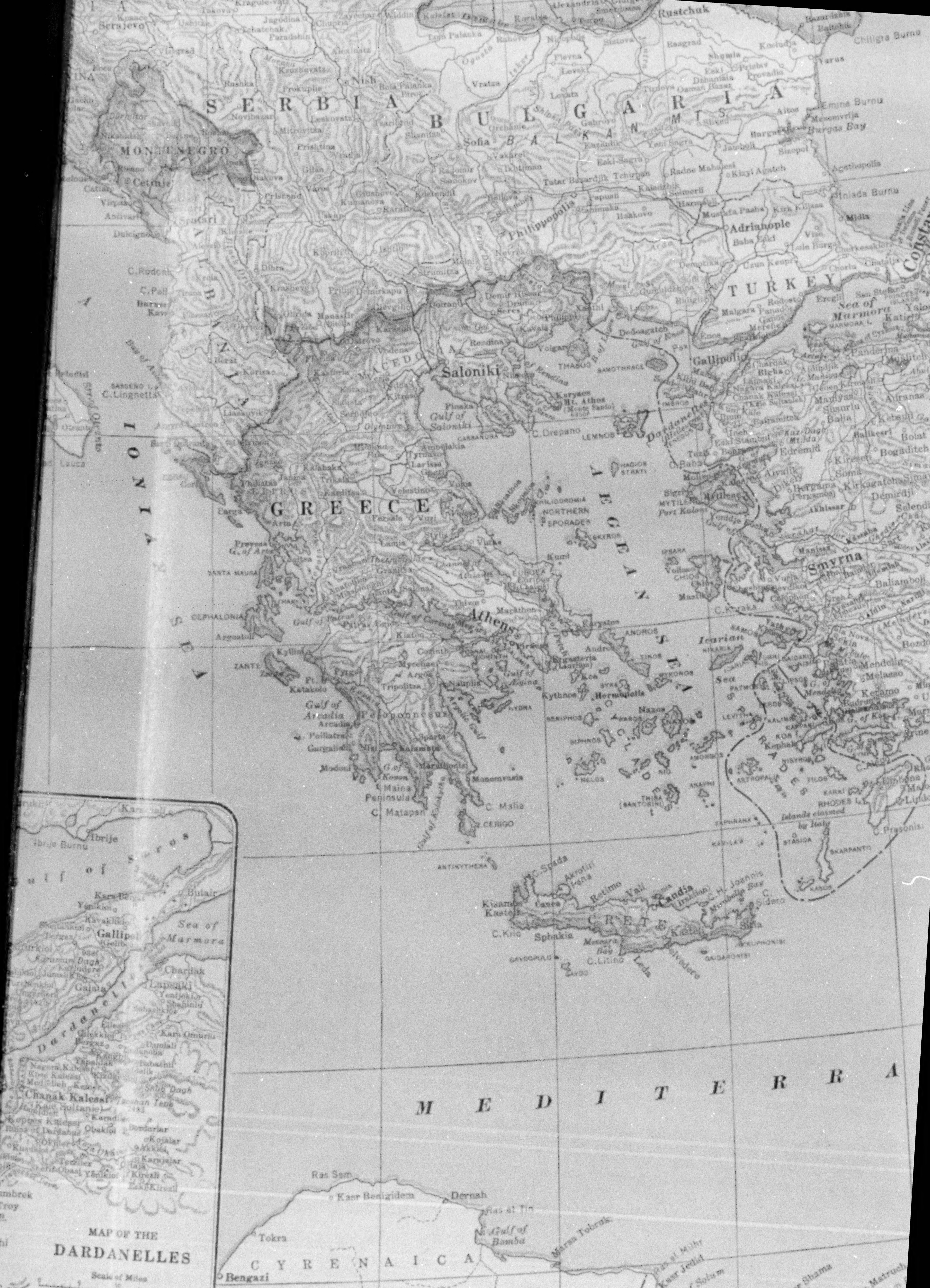
Ezine
MAVRO I.
AEGEAN SEA
MAP OF THE DARDANELLES
Scale of Miles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Plevna
Philippopolis
Adrianople
Burgas Bay
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Cetinje
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Saloniki
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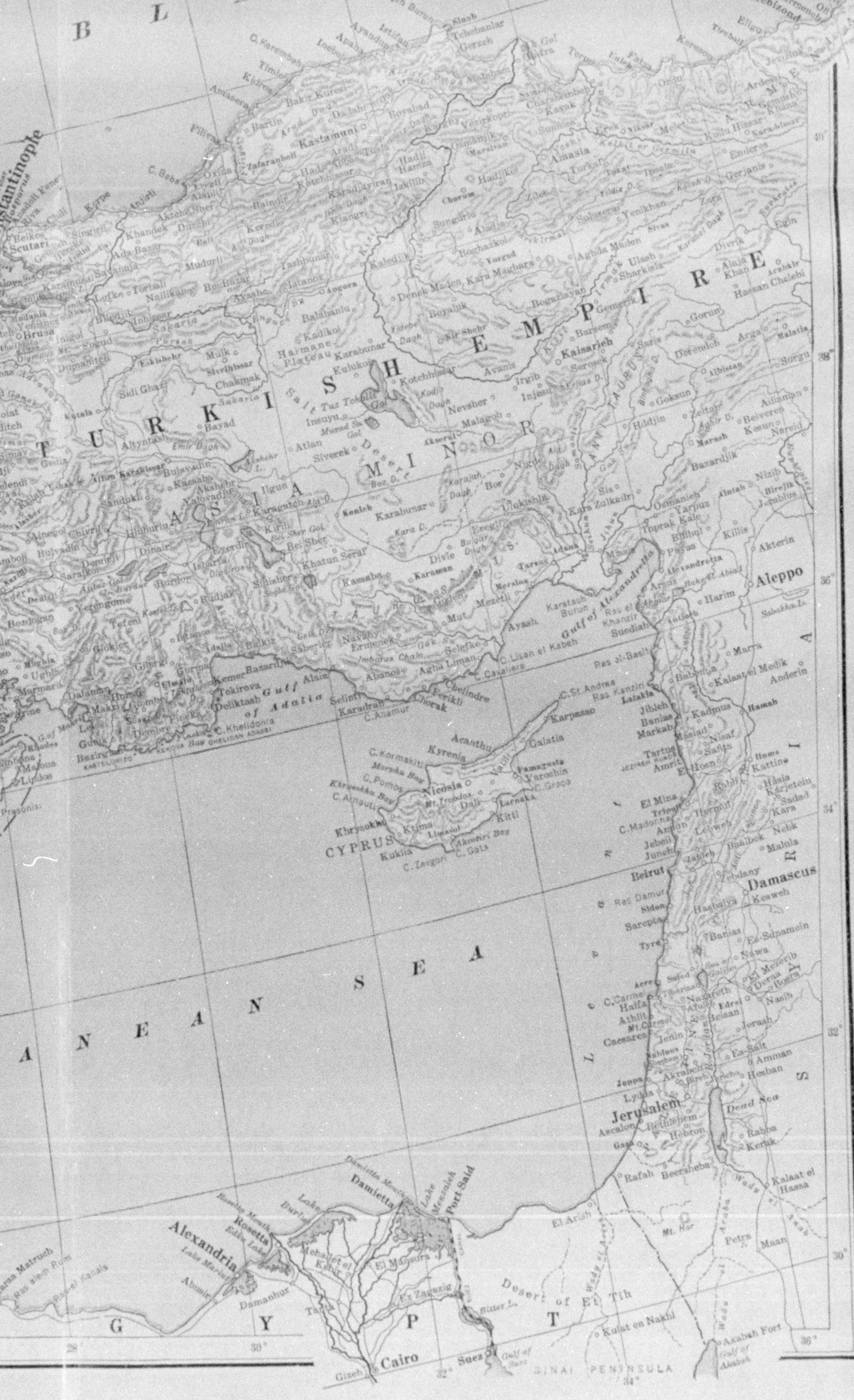
Mt. Athos
Kavala
Dedeagatch
Gulf of Saros
Gallipoli
Dardanelles
Sea of Marmora
LEMNOS
THASOS
SAMOTHRACE
IMBROS
AEGEAN SEA
NORTHERN SPORADES
GREECE
Janina
Larissa
Volo
Lamia
Arta
Preveza
G. of Arta
SANTA MAURA
CEPHALONIA
ZANTE
Patras
Gulf of Patras
Gulf of Corinth
Corinth
Athens
Piraeus
Gulf of Aegina
Argos
Nauplia
Tripolitza
Mycenae
Sparta
Kalamata
Peloponnesus
Gulf of Arcadia
Katakolo
Gulf of Kolokythia
Monemvasia
Maina Peninsula
C. Matapan
C. Malia
CERIGO
ANTIKYTHERA
ANDROS
TINOS
Syra
Hermoupolis
Naxos
Kythnos
Keos
MELOS
SANTORINI
CYCLADES
Mytilene
Port Kalone
Smyrna
CHIOS
SAMOS
Icarian Sea
SPORADES
KOS
RHODES
Islands claimed by Italy
SKARPANTO
KASOS
CRETE
Candia
Canea
Retimo
Sphakia
C. Spada
C. Sidero
GAVDOPULO
IONIAN SEA
C. Linguetta
Brindisi
Otranto
MEDITERRANEAN
CYRENAICA
LIBYA
Bengazi
Dernah
Ras et Tin
Gulf of Bomba
Marsa Tobruk
Gulf of Solum
Kasr-el-Ajdebia
Ras Sem
Tokra
E
18°
20°
22°
24°
26°
MAP OF THE DARDANELLES
Scale of Miles
Gulf of Saros
Ibrije
Bulair
Sea of Marmora
Gallipoli
Lapsaki
Chardak
Dardanelles
Chanak Kalessi
Kilid Bahr
Troy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Sivas
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Konieh
Karaman
Tarsus
Adana
Mersina
Alexandretta
Gulf of Alexandretta
Antioch
Aleppo
Hamah
Homs
Latakia
Tripoli
Beirut
Damascus
Sidon
Tyre
Acre
Haifa
Mt. Carmel
Nazareth
Sea of Galilee
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Jaffa
Joppa
Jerusalem
Bethlehem
Hebron
Dead Sea
Gaza
Beersheba
Amman
Petra
Maan
El Arish
Desert of Et Tih
Sinai Peninsula
Akabah Fort
Gulf of Akabah
Gulf of Suez
Suez
Bitter L.
Port Said
Lake Menzaleh
Damietta
Rosetta
Alexandria
Lake Mariut
Damanhur
Tanta
El Mansura
Ez Zagazig
Cairo
Gizeh
G Y P T
T U R K I S H E M P I R E
A S I A M I N O R
T A U R U S
S Y R I A
Salt Desert
Tuz Tcholli Gol
Gulf of Adalia
Adalia
C. Khelidonia
C. Anamur
Selefke
Rhodes
Lindos
Nicosia
Famagusta
Larnaka
Limasol
Kyrenia
Mt. Troodos
Karpasso
C. St. Andrea
CYPRUS
N E A N S E A
Levant
Kizil Irmak
Sakaria
Euphrates
28°
30°
32°
34°
36°
38°
40°

VOL. XXVIII, No. 1 WASHINGTON JULY, 1915

THE NATIONAL GEOGRAPHIC MAGAZINE

CHANNEL PORTS—AND SOME OTHERS

BY FLORENCE CRAIG ALBRECHT

Illustrations from Photographs by Emil Poole Albrecht and A. W. Cutler

THE sturdy old vessel is coming into port after an eventless voyage. Seven days of ceaseless plowing through a shimmering sea, under a great round dome, now radiant light, now dusky velvet, star-sprinkled. The Scillys have floated by, foam-washed, mist-wrapped, fairly islands in a magic world all cloud and water. The stately white shaft upon Bishops Rock has risen, passed our vision, and gone down on the western horizon. Lands End thrusts its rocky headland toward us, and back of it, softly purple, lays Cornwall and England.

Steadily the ship goes on and smoothly the panorama passes—rock and headland and cliff, now green, now golden with gorse, now bare and rugged; inlet and bay and harbor, with here and there an isolated house, a tiny village, a pretentious town, a great port.

An unfriendly coast? Yes, with heavy seas and winds, with thick sea-fogs—a dangerous one; rocks ever ready to tear holes in the stoutest vessel, currents ever ready to drive them on. But a picturesque coast; a wonderfully beautiful coast, both upon summer days and in winter storms; a coast with many harbors, none too easy of entrance by reason of rocks and tides, many impossible for any but the smallest craft, but all made as serviceable as natural difficulties permit.

It was their picturesqueness, not their serviceability, which once occupied us so delightfully through long sunny days "before the war." That there was no suggestion of warfare in them I will not say; there are, in fact, very few English or Cornish ports which along with their vivid smugglers' tales do not mingle one or two of battle on sea or land.

MEMORIES IN EVERY PORT

Too many fleets have gone up and down the channel since history began not to have left memories in every possible port. But they were so long ago, those battles! So long ago that one saw merely the picturesque side of them—the valor, the courage, the victory; one saw the boats that came into harbor battered, perhaps, imperfectly manned, but with flags flying bravely and men cheering wildly; one did not remember those that had sailed away to come back no more.

How changed our thoughts today. The sea has closed over a bright young head we knew; not the glory, not the pride of victory flaunts its banners before our dazzled eyes; with clear, sad vision we mark the sorrow, the cost of war.

What are they like now, those ports, big and little, along the British Channel; ports from which we have watched the fishing fleets sail to the north or come in heavy laden; ports where great ocean liners came and went perpetually; ports

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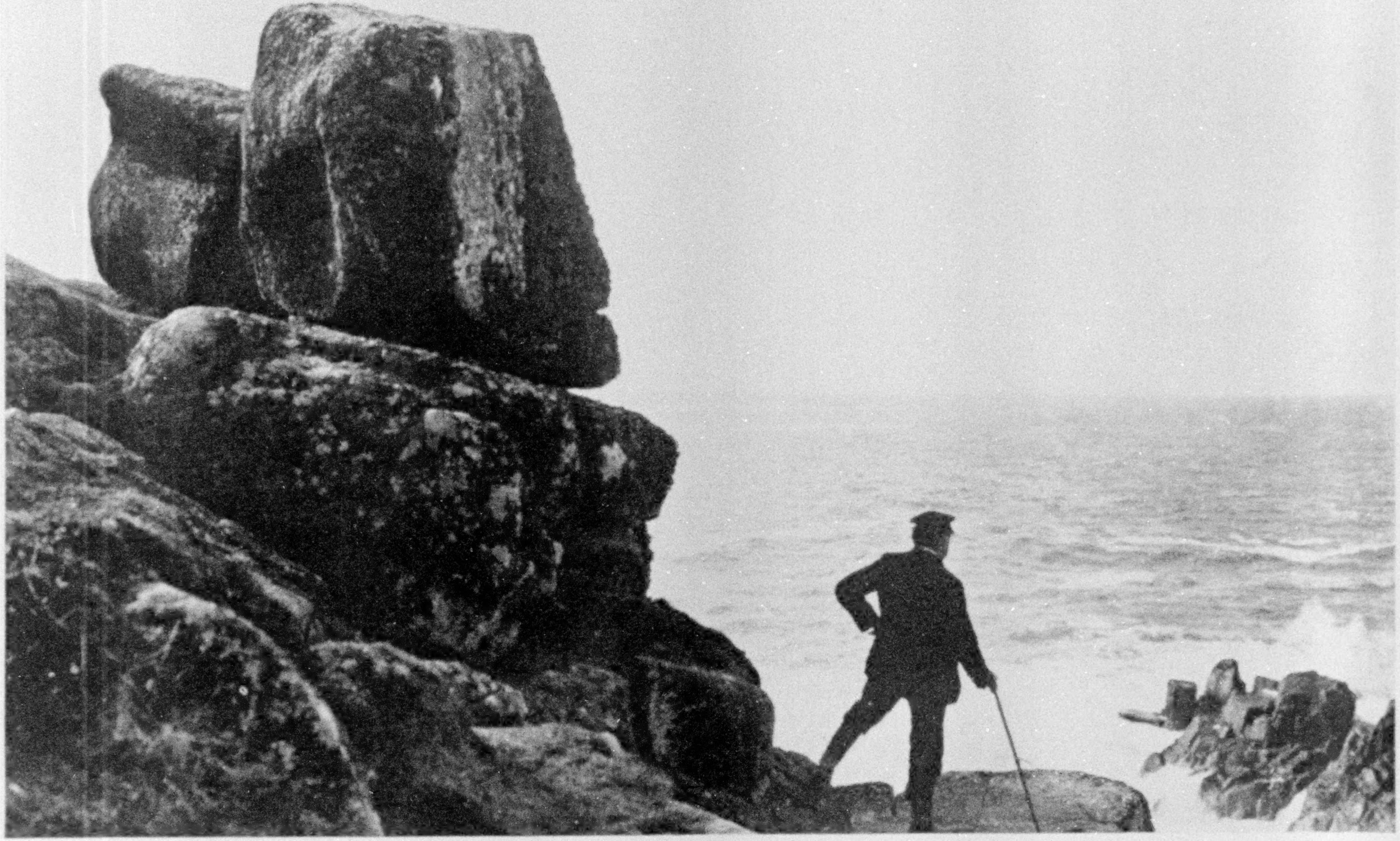

Photo by A. W. Cutler

ON THE EDGE OF THINGS IN ENGLAND: A SCENE AT LANDS END

On the left of the picture may be seen what are popularly known as the "last two stones in England," while the last man is seen contemplating the vast expanse of the briny deep in front of him. A glimpse is also caught of the Longships Lighthouse. There is a depth of 20 fathoms between the lighthouse and the coast, a distance of about three-quarters of a mile.

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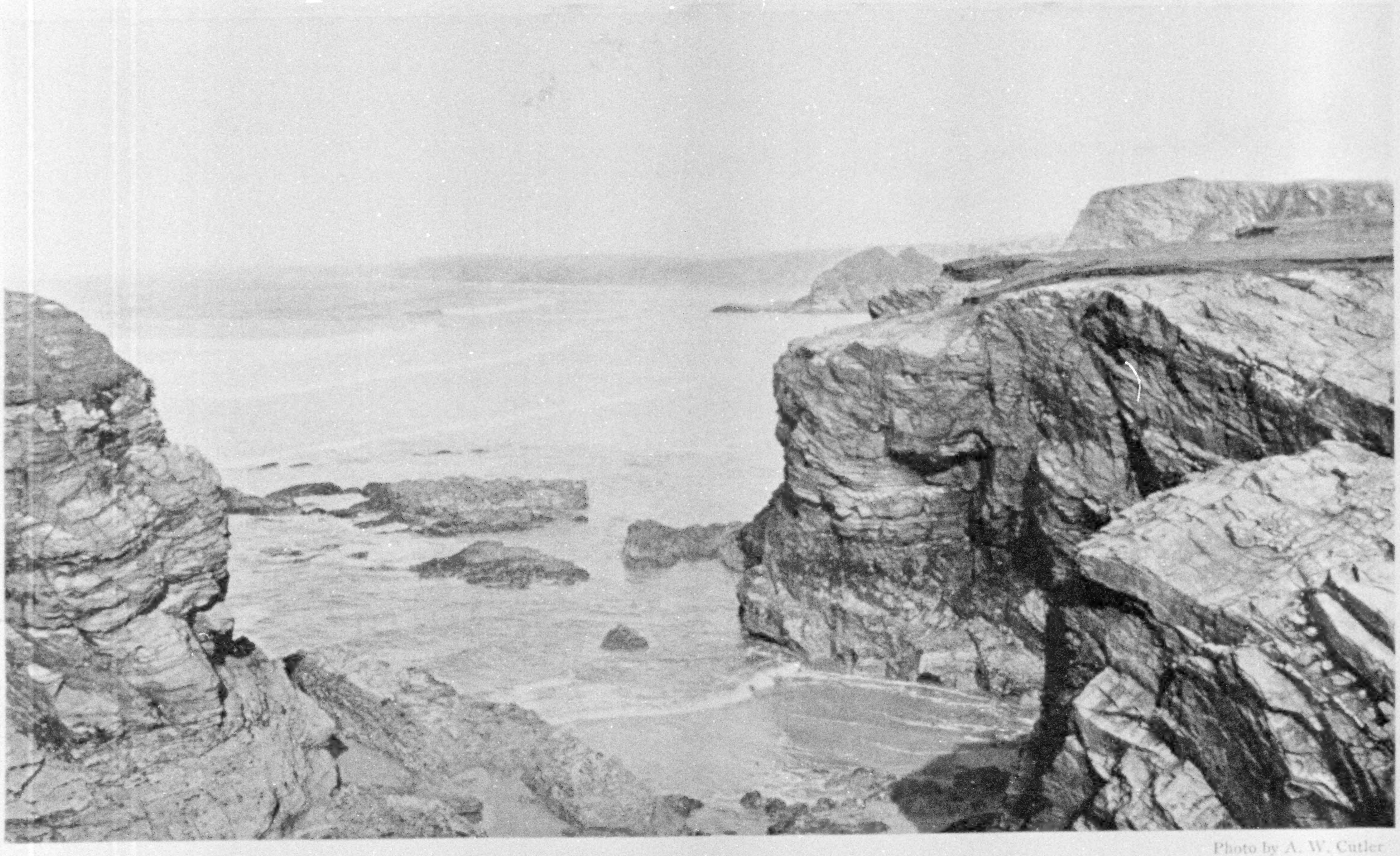


Photo by A. W. Cutler

A WILD, RUGGEDLY PICTURESQUE BIT OF THE CORNISH COAST AT PERTH, NEAR NEWQUAY

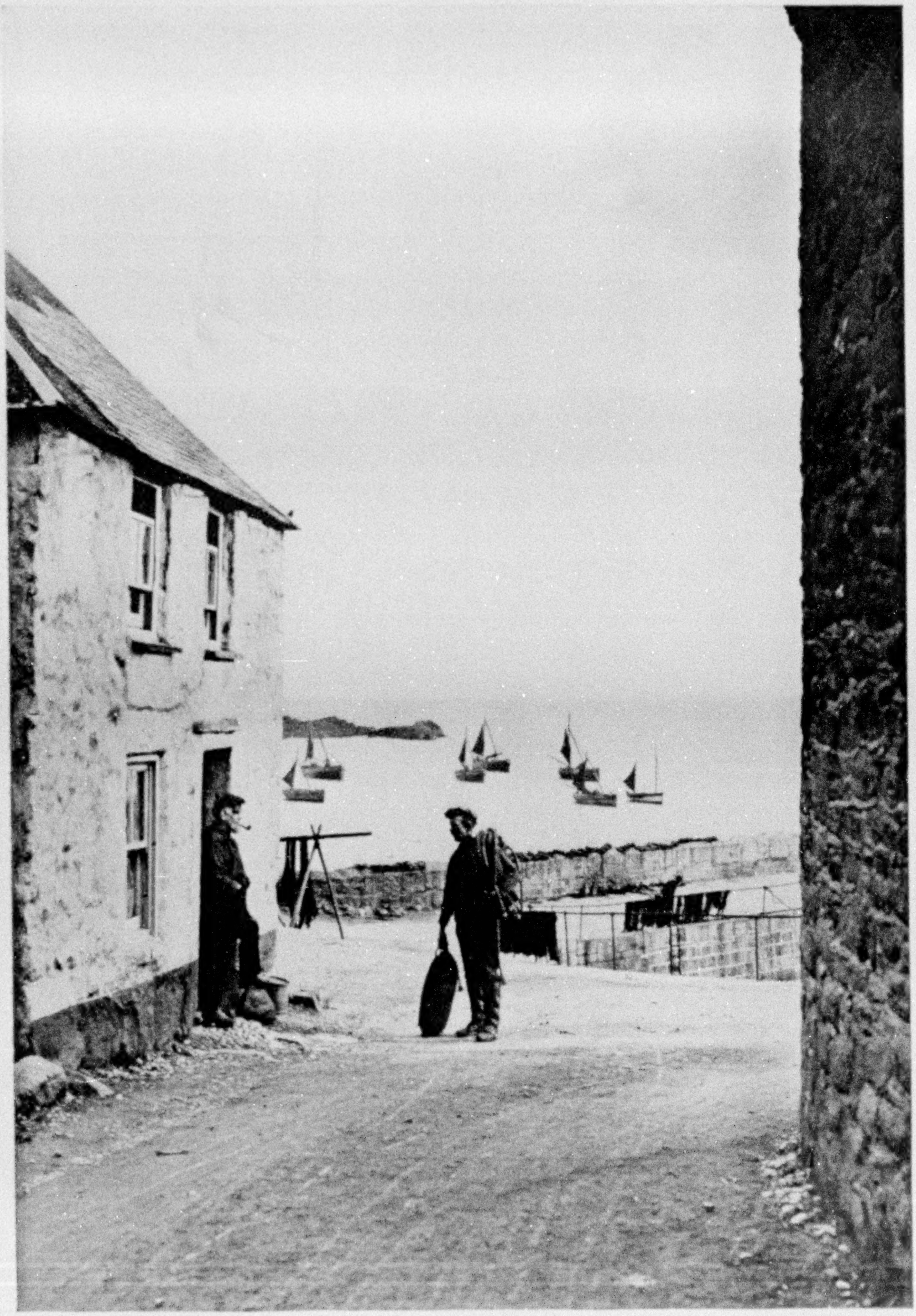


Photo by A. W. Cutler

A VILLAGE SCENE AT MOUSEHOLE: CORNWALL

One of the few old Cornish villages that remain to a great extent as of yore. Mousehole was an important port before London was a town. To it and the other small Cornish harbors the Phœnicians came for tin centuries before the birth of Christ.

where huge squadrons of grim, gray men-of-war gathered silently?

Penzance—what is Penzance today, the sunny pleasure-loving little sea city, whence came those picturesque stage-pirates that made tuneful our youth? The coast is no more beautiful here on Mounts Bay than elsewhere to east or west; not so rugged or so wild as on Cornwall's northern shore, but the curve of green cliff is very smooth and lovely, the sun shines warmly; the roses bloom; every baby ripple murmurs a sea story; every tiny breeze brings a legend. It is a fascinating place not only for what it is, but what it suggests.

Cornwall is Celtic, and to be Celtic is not only to believe in fairies, but to see them, and mermaids and pixies and many other fascinating things concealed from Anglo-Saxon eyes; so that a dull-witted tourist, unless he has been lucky enough to have had a Celtic great-grandparent—when, of course, he has "the sight"—may find some things rather incomprehensible. As to the pirates, let me tell two stories—one for those who understand, one for those who do not.

GETTING A FAIR START!

At Breage they tell a story of Germoe; at Germoe it is told of Breage; but there was likely little to choose between them; they are neighbors on this rocky coast. In one parish church, then, or the other, in the midst of Sabbath service, a head was thrust in at the door and a hoarse voice croaked: "A wreck! A wreck!" The congregation stirred uneasily; a man half rose, then another; in a moment there was a stampede for the door. "Halt!" rang out a stentorious voice from the pulpit; then, to the clerk, "Anthony, shut that door!"

The congregation was well trained; it knew its vicar. Man, woman, and child, for children took no small part in the business of wrecking, stopped in their tracks; the door clanged shut. Blandly the parson elbowed his way between

business of wrecking, stopped in their

pulpit; his coat as well. At the door he turned his hand on the latch: "Now, my dear brethren, now we shall all start fair."

The other story concerns the first steamer which passed out of the channel. All the Cornish boats followed it for miles, quite sure it was on fire and that there would soon be "fair pickings."

MOUSEHOLE AND NEWLYN

Penzance, in spite of her superstitions and her saints, cannot "hold a candle" to her neighbors in antiquity or legends.

Little Mousehole, on her right, beyond Newlyn—lovely Newlyn, beloved of fishermen and artists, which last we saw in the long light of a summer sunset, her myriad of fishing-boats putting out in a path of gold over a silver sea, like huge brown butterflies fluttering over the edge of the world, while wives and sweethearts waved a last farewell from the quays, and on the cliff a handful of old men critically watched the fleet go out, the fleet that they should sail with no more—little Mousehole ("Mousel," in local speech) was an important port before London was a town (see page 4).

As for Marazion, to her left, who shall measure her years? According to Cornish history, "in the days of Ezekiel the prophet" it was already an important city, to which Phœnician merchants came for tin. For a town which has entertained Phœnicians and giants and has looked for centuries at a castled island floating in a marvelous sea, Marazion is remarkably dull. No one goes there except to visit the island which gives the bay its name.

St. Michaels Mount, little brother to Mont St. Michel, off the Breton coast, is a rocky islet 230 feet high and a half mile from shore, with which it is connected by a natural causeway uncovered for about three hours at ordinary low tides (see picture, page 9). With southwest gales the island may remain an island for weeks, and with high seas be inaccessible even to boats. It is a most picturesque pile; its steep grassy slopes, in springtime yellow with a million daffodils, crowned with the irregular jumble of chapel and castle and ringed by a gleaming sea.

CORMORAN AND ST. KEONE

It has much history. Like the other St. Michael, it stood once in a forest and was pagan, Christian, druidical; it has

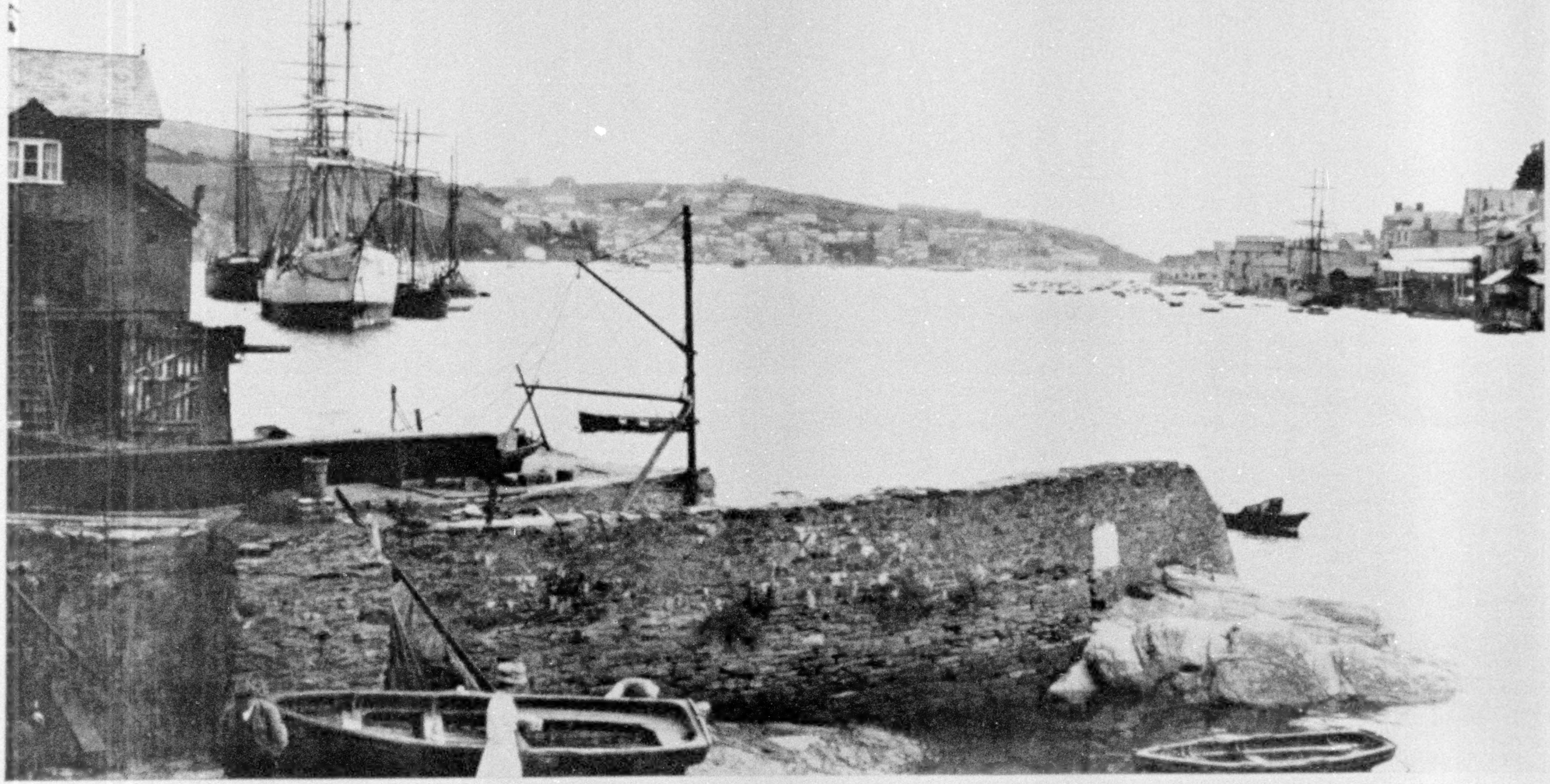


Photo by Emil P. Albrecht

FOWEY HARBOR FROM BODINNICK FERRY: FOWEY, ENGLAND

Once one of the great seaports of the kingdom, boats from Fowey sailed by scores to the Crusades, to the siege of Calais, to the plundering of Normandy. The shores are so steep, the harbor water so deep, that merchantmen of fair tonnage can lay up against the bank, the spars almost touching the trees.

been tenanted by saint and sinner, soldier, monk, and knight. Dearest to the heart, perhaps, is the story of Cormoran, whom later Jack-the-Giant-Killer slew, dearest perhaps because of the memories of a little girl and boy who loved the story long ago. We ought to prefer Saint Keyne—but, well, Cormoran is so human. Can you see the one-eyed monster playing "bob-button" with his friend, the giant, on Carn Brea? And the huge boulders they used for playthings! Ah! Cormoran was a real giant then and in his prime; doubtless he had grown old and weak and thin when Jack came.

The mount belongs now to the St. Aubyn family and Lord St. Levan admits strangers quite graciously at suitable hours. One may make a tour through its rooms if one likes, but it is pleasanter to sit among the grasses, where shy rabbits scurry to and fro, and read or dream.

Besides its legends, the castle has much real history, some of it martial. In the War of the Roses Henry II entered it as a pilgrim, held it as a soldier, while Perkin Warbeck marched toward London claiming a crown: the "Fair Rose of Scotland" sought shelter there; during the Civil War Roundhead and Royalist strove hotly for its possession.

WHERE PILCHARDS BECOME SARDINES

We may follow the coast-line eastward and southward to the Lizard, passing the great wireless station upon Poldhu, or cut across the little neck of land to Falmouth, a very fair harbor. Megavissey, beyond, is but a fishing port, where—may I hint it?—pilchards sometimes become sardines; but Fowey, to which we next come, has considerable past importance and present pride (see page 6).

Once one of the great seaports of the kingdom, boats from Fowey sailed by scores to the Crusades, to the siege of Calais, to the plundering of Normandy. "Fowey gallants" swaggered on all the then known seas, and when not busy with strangers turned to trimming their rivals nearer home. Finally, accused of piracy, Edward IV confiscated their ships and gave them to Dartmouth.

What a blow to a port which had sent more boats and men to support Edward III than any other in the kingdom! Fowey never recovered from this crushing injustice; but after a time she turned to peaceful trades and welcomed the stranger ships that she once barred out, filling them with barrels upon barrels of powdery china-clay.

There are remnants of forts upon each side of the harbor entrance, forts between which a chain was slung each night. In spite of the forts and the chain and a castle on the hill, invaders got in, however, Frenchmen coming to avenge a fight against a Genoese corsair in the hire of the King of France, in which the "Fowey gallants" seem to have had the best of it. Do you know the ballad of "John Dory," otherwise Giovanni Doria?

> The grappling hooks were brought at length,
> The brown bill and the sword-a;
> John Dory at length, for all his strength,
> Was clapt fast under board-a.

FOWEY'S GLORY GONE

That was in the days of good King John of France (say 1350), and in 1457 comes the invasion; and then, pouf! adieu to all Fowey's glory and hope. Once the greatest port in the kingdom, she has seen every rival outgrow her in favor and prosperity. Probably the little town is no larger today than then; certainly the harbor is the same—close locked, deep, smooth, shining green surrounded with steep tree-clad hills, and always boats coming and going through the narrow entrance, the entrance whose chain went to Dartmouth along with the fleet; boats at anchor far out on the mirror-like surface or tied up close to shore, the masts and spars mingling in astonishingly friendly way with trees or houses.

There are no men-of-war among them and no fishing-boats! Make no mistake there! Fowey is furious if taken for a fishing port. Peaceful merchantmen and yachts, these fill Fowey harbor, make its life. More than twoscore men-of-war she sent to Calais—770 men. How pitifully small are the figures today, when one modern battleship requires a larger crew than did that fleet 450 years ago. No 50 ships of modern type could find place in Fowey harbor today, but for smaller craft—submarines, destroyers—it affords admirable shelter.

That it is very lovely goes without saying; all Cornish ports are that.

UNSPOILED POLPERRO

Eastward again from Fowey upon the coast, in a cleft so narrow, so jagged, so rocky one wonders why men chose it for a home, lays Polperro, the most picturesque, the most unspoiled of Cornish fishing ports, retaining all its ancient dignity of life and labor unfluttered by the summer villas now beginning to crowd the cliffs above its head. They will not crowd too closely. What Polperro thought a grievance is perhaps a blessing in disguise—the huge scaffolding, which, with another a mile away, the admiralty uses as a speed test for warships in the channel. Hotels will not wish nor be permitted to draw near these marks, and Polperro may keep her cliffs free yet a little while.

By tre, pol, and pen
Ye shall know the Cornishmen.

So it is not surprising to find these prefixes figuring in the names of their towns: *tre,* a dwelling; *pol,* a pool; *pen,* a headland; as *Polperro,* Peter's pool; for to whom could a fishing town be more appropriately dedicated than to St. Peter. Cornwall is ardently Methodist; but be in Polperro on July 10, "Peter's Day"—look and listen!

But Polperro did not always depend upon fish for a living. In the days when smuggling was a profession, if not an art, Polperro had few rivals, and, reading those old tales, one sees quite clearly why men chose these clefts for habitations. Conveniently near are coves and caves, undiscoverable by the keenest customs officers, and boatmen could sail in and out these narrow rock-bound harbors fearing no pursuit.

"PARSON HELD THE LANTERN!"

There are hints of even darker deeds than smuggling. That was readily condoned, if not lauded—boats were made for better things than to carry fish. And when it comes to wrecking, Polperro's own son and historian, Jonathan Couch, rather intimates that it would have been flying in the face of Providence not to make use of that rocky shore.

"All joined in the business," he says; "the smith left his forge, the husbandman his plow; even women and children turned out to assist in the unlawful traffic and received their share of the proceeds." "Didn't the parish priest put a stop to such wickedness?" is asked. "Oh! parson? No; he didn't say much one way or t'other; parson, he just held the lantern."

Those were Polperro's palmy days, when the price of fish in the London market troubled her not at all. And the bold seamanship she practiced stood her in good stead when she went, as often she did, in His Majesty's service to the wars with France. And if today you see broad-shouldered loiterers on the quay do not condemn them utterly.

The fishing is not what it was; the other sea trades are long since out of fashion; but once more Polperro hears the call "to His Majesty's service," and I am sure makes the usual Cornish answer. Cornish mariners, "Fowey gallants," if you will, built up the first great English navy before the Devon sea-dogs and Sir Francis Drake took it in hand. And there are no better or braver seamen today than these who in tiny boats brave for months the rigors of the Arctic seas that their families may live.

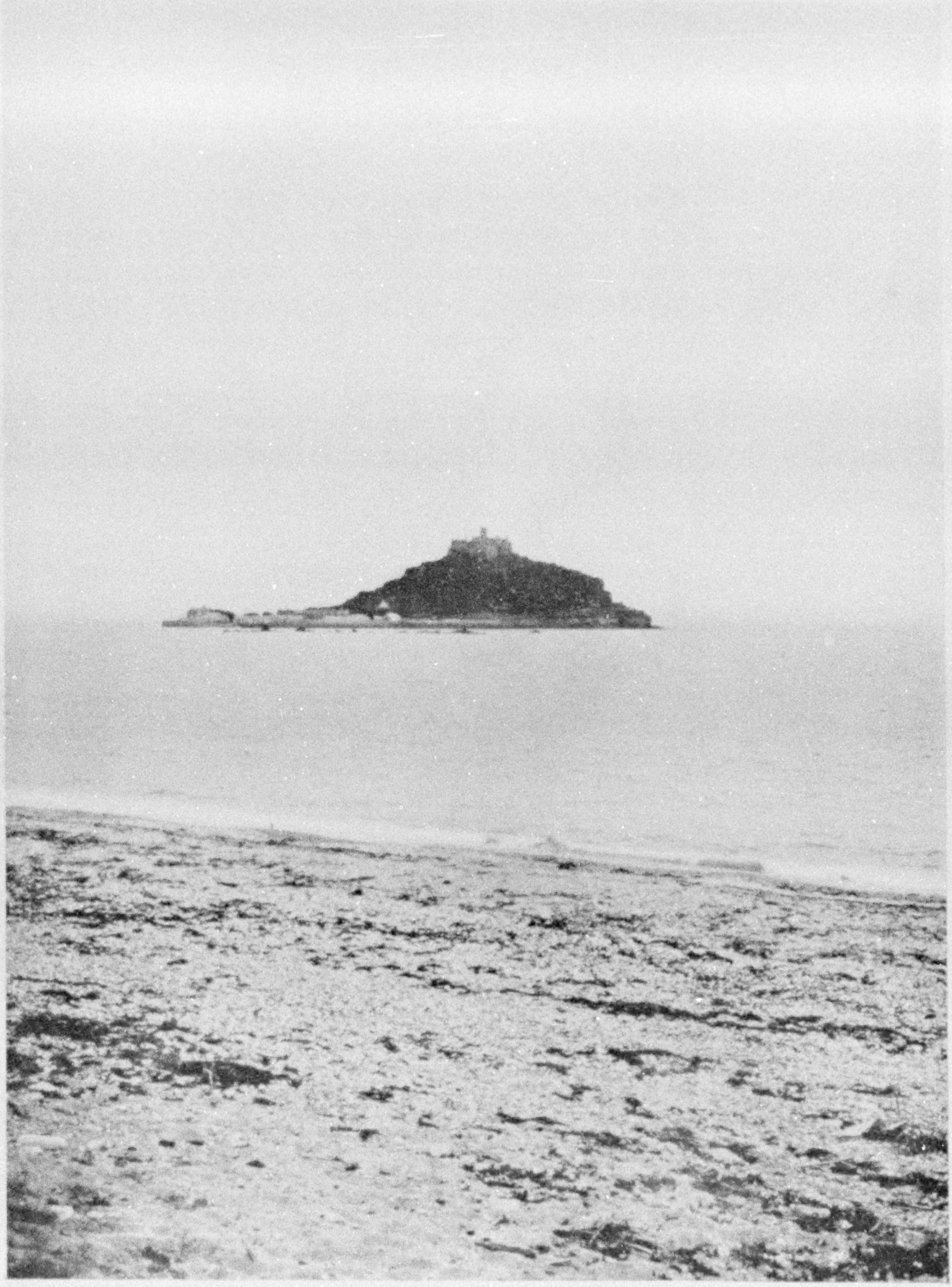
Polperro's chief catch, however, is mackerel, crabs, and conger. There are few, if any, conger-eel in American waters; they are to some people a most unpleasant-looking fish. Cornwall esteems them highly and makes them into pie with much cream and parsley.

CORNISH SQUAB PIE

Cornwall makes many things into pie and the names are deceitful. "Squab pie" sounds appetizing until one learns that almost everything but squabs goes into it—fat mutton, onions, apples, raisins, possibly "saffern" (saffron), and a liberal bath of clotted, or "clouted," cream as a finish.

There is a funny story concerning Cornish "pasties." It is usually told in Devon.

The devil came one day to the banks



ST. MICHAELS MOUNT: A VERY BEAUTIFUL CASTLE-CROWNED ISLAND AT EACH HIGH TIDE

At low tide a half mile of wet sand and a rocky causeway lay between it and shore. It is approximately a mile in circumference and 230 feet high. Its first tenant was the giant Cormoran, whom Jack-the-Giant-Killer slew, or so 'tis said. Next were Druids, then Christian hermits, the priory of St. Michael, St. Keyne, finally a feudal castle which belongs to the St. Aubyn family and remains today. Of the earlier tenants there is small trace. The tiny fishing village at the foot of the mount is St. Aubyn's Arms (see text, page 5).

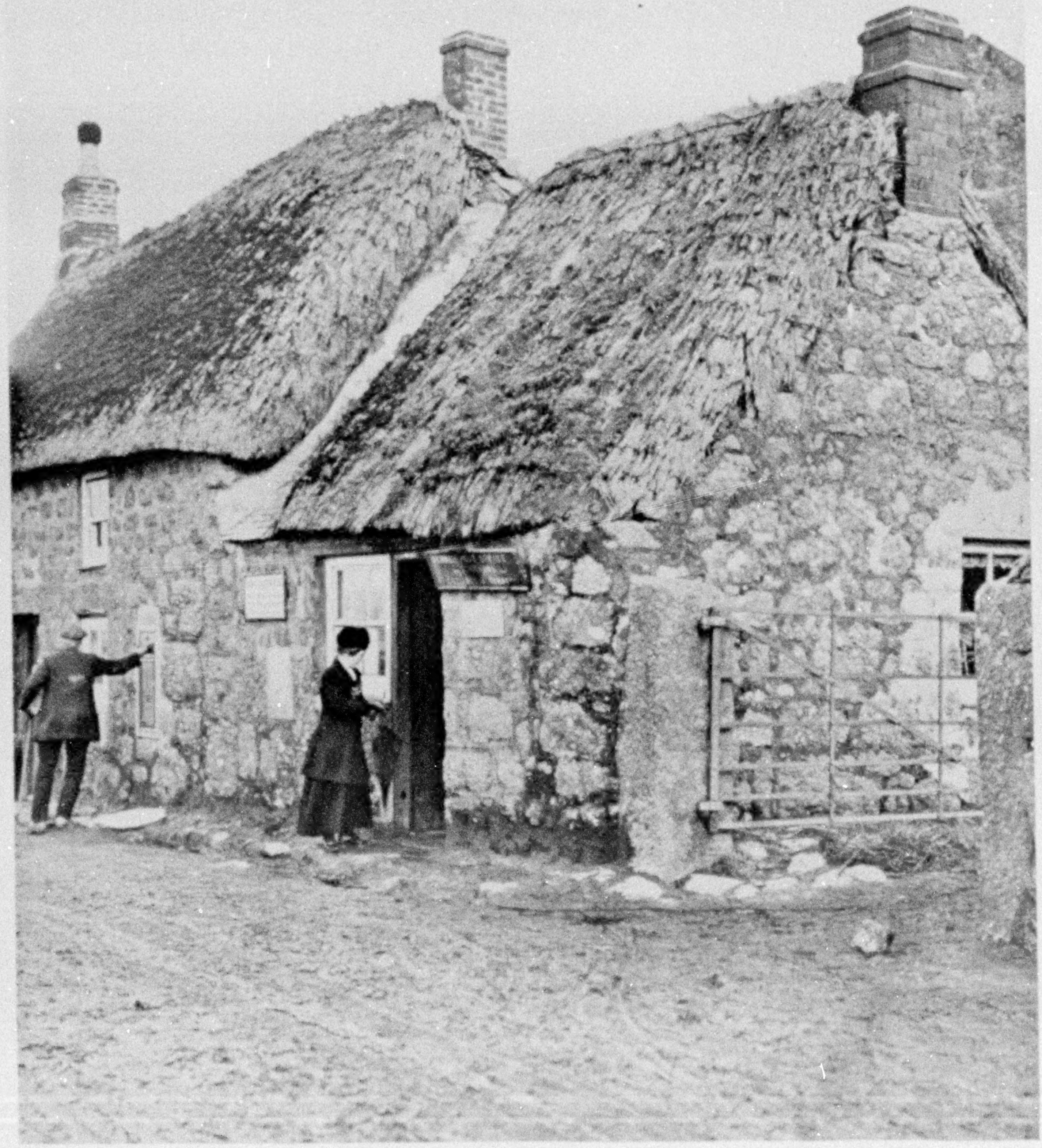


Photo by A. W. Cutler

THE LAST POST-OFFICE IN ENGLAND, AND A PRIMITIVE ONE

It is situated close to Lands End. The last man is seen in the act of posting a letter, and the last woman is about to purchase a stamp for one

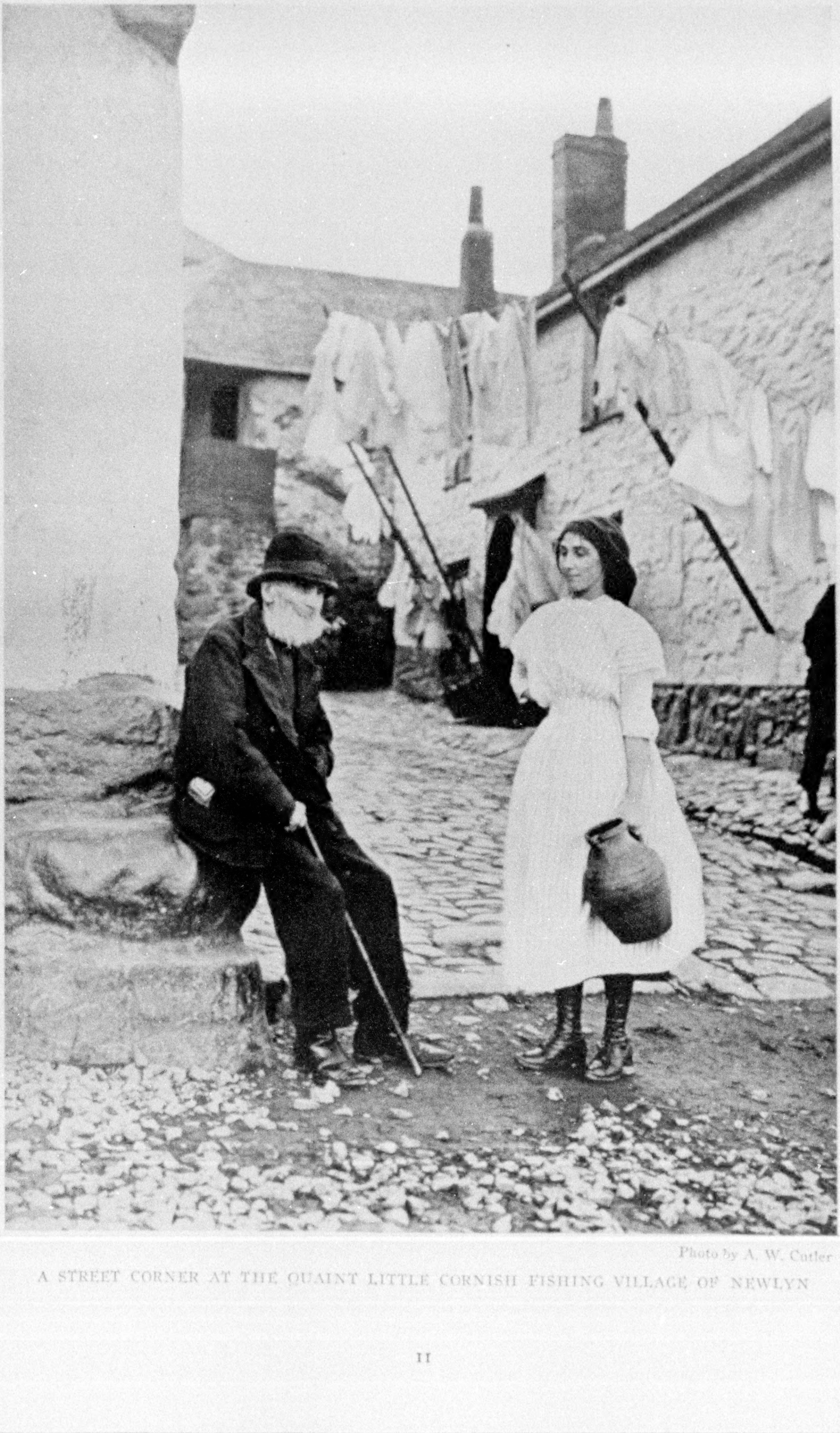


Photo by A. W. Cutler

A STREET CORNER AT THE QUAINT LITTLE CORNISH FISHING VILLAGE OF NEWLYN

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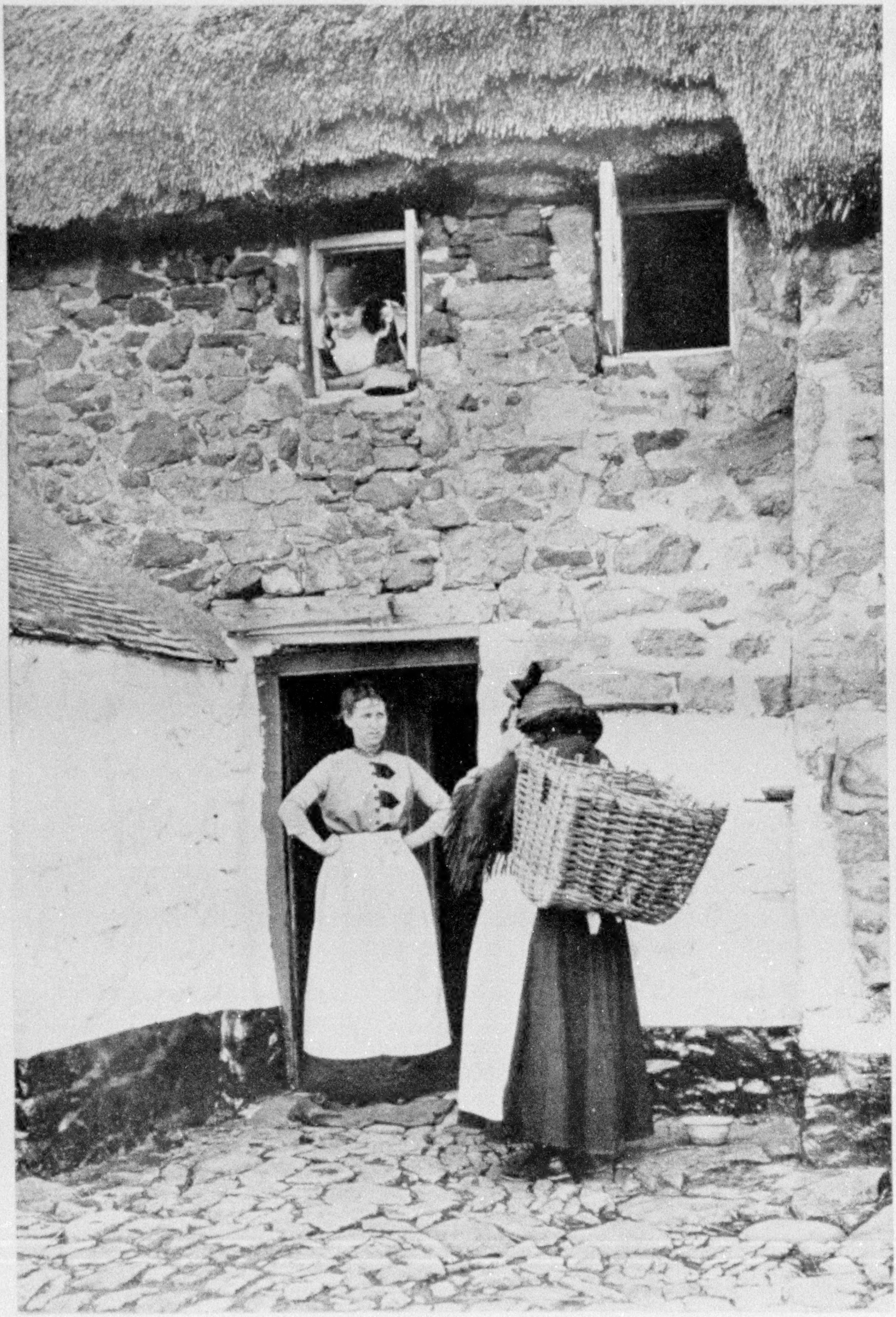

Photo by A. W. Cutler

A CORNISH FISHWIFE AND HER BASKET OF FISH—A FAMILIAR SCENE AROUND NEWLYN

These old baskets, called cawels, are rapidly disappearing. Note the curious method of carrying the basket—by means of a band around the head, or, rather, suspended from the head.

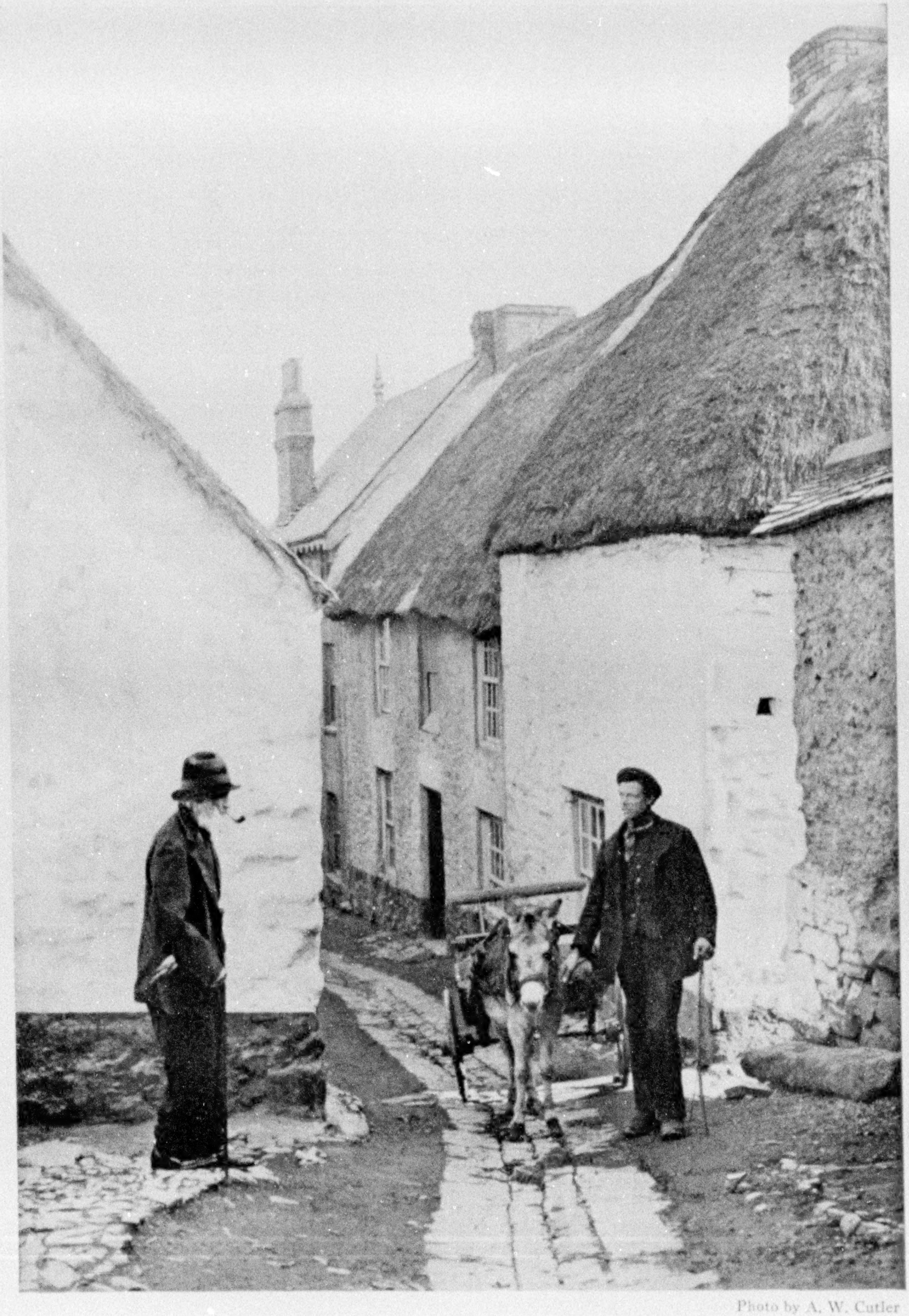

Photo by A. W. Cutler

A STREET CORNER AT THE OLD CORNISH FISHING VILLAGE OF NEWLYN

These steep, narrow streets running up straight from the harbor are typical of the quaint fishing villages around Penzance. Note the thatched roofs

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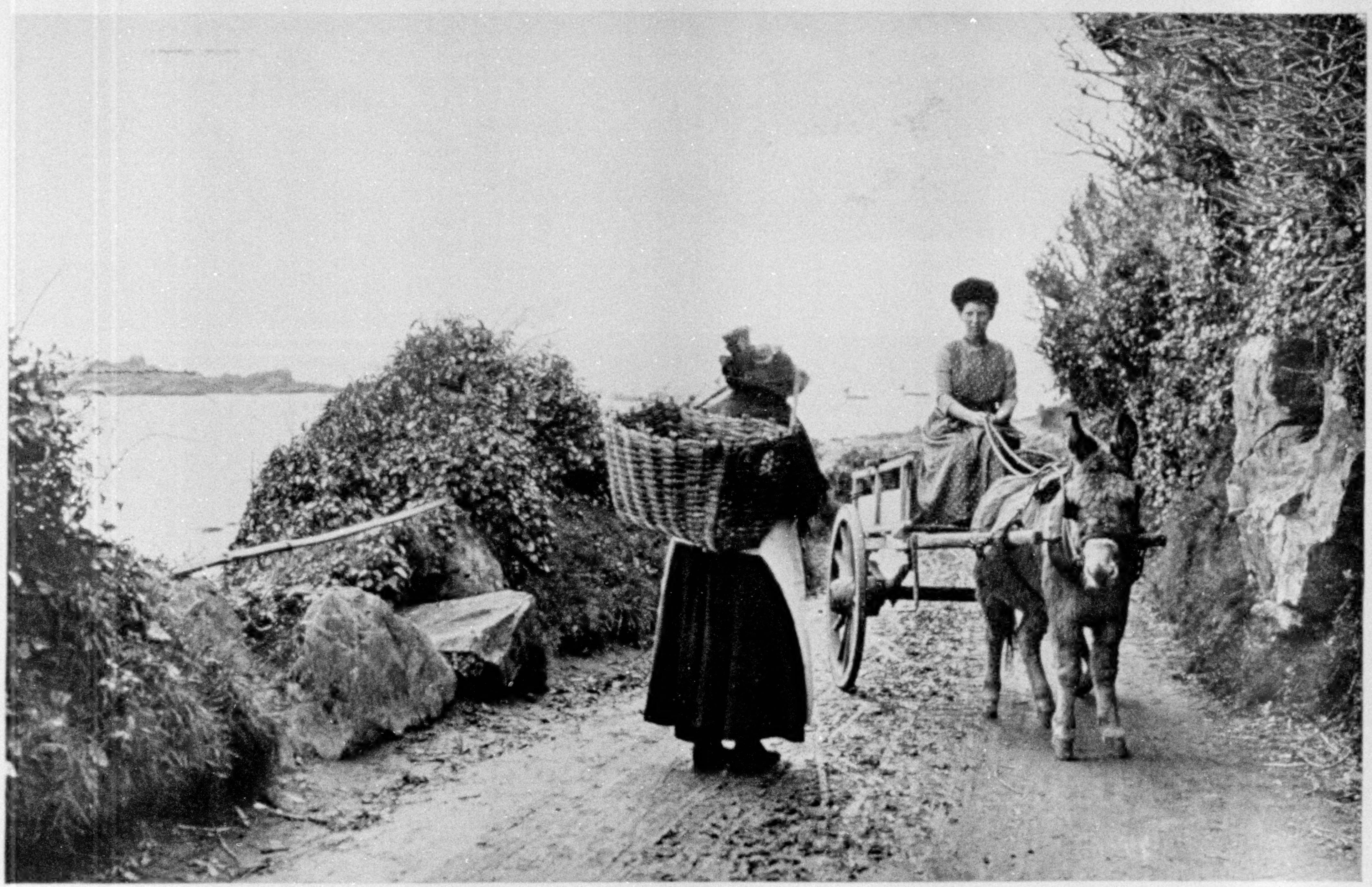

Photo by A. W. Cutler

A WAYSIDE CHAT IN CORNWALL

The woman with the donkey and cart is on her way to Penzance, while the fishwife with whom she is exchanging experiences is on her way home to the fishing village of Mousehole. The basket suspended from her head is known as a cawel of the Tamar, the rippling river that divides Devon and Cornwall, and looked over at the rocky land beyond. Its gaunt moors, where the rocks break easily through their crusts of ungenerous soil, the great barren cliffs stepping down roughly to a tempestuous sea, contrasted unfavorably with Devon's luxuriant valleys.

His majesty looked at the swift current and shook his head. "No!" he said finally, "No, that's no place for me! Every one who goes there is turned into a saint and everything else into squab pie. I'm fit neither for one nor the other!" And he stayed in Devon. Now, on whom is the joke?

There has been much attempt recently to compare Polperro with Clovelly, on the Bristol Channel; but why make comparisons? Some one is sure to be hurt and no one helped. Yet as it is not very easy to get anywhere from Polperro, which is 6 miles from Bodinnick Ferry and Fowey and 4 from Looe by the hilliest of roads, and quite off the line of railroads, we can almost as cheerfully take the "long jump" to Clovelly now.

But before that let us look attentively at Polperro, at its closely huddled houses, built on and in and of the rock; its roses and fuchsias and clematis, which bloom as luxuriantly as in southern climes; for these rock clefts are sheltered from winter winds and warmed by the southern sun; at its little rock-bound gleaming harbor, where at high tide the boats rock lazily and at low water a thousand silvery gulls pick up their dainty feet discreetly in the ooze; at its steep, slippery cliffs, whence one has such glorious breezy views of sea and rock and headland, and of the warm sheltered valley at one's feet (see pictures, pages 17 and 19-22).

POLPERRO KNOWS NO "DRUMMER"

Let us glance at the net-making and boat-mending and sail-painting, at the big baskets of wicked brown crabs, at the conger hanging on the scales, at the big, quiet men, who work on undisturbed by the foreign visitor. No one asks if you wish anything, no one offers to sell or to hire. They will welcome you at the tiny inn if you go, but the mistress will not seek you out. You may hire a boat if you like, but no one will ask if you wish to.

Polperro attends to its own business, and that does not include catering to tourists. There are always artists at Polperro. They and the fishermen observe each other, become friends, perhaps; but business is not mentioned between them.

"THE MOST EXQUISITE VILLAGE IN ENGLAND"

Clovelly fills a rock cleft on the north Devon shore as Polperro does upon the southern Cornish one, but there all comparisons end. Clovelly may be still an earnest fishing village, but her looks belie it. "The most exquisite village in England" some one called her, and she deserves the title (see pictures, pages 24 and 26-29).

From the coach-road where, at the top of the cliffs, you enter upon Clovelly's one street, to the sea; or, if you come by boat, from the harbor to Hobby Drive, and the public road, everything is dainty, elegant of its kind, groomed to impossible perfection. No whitewash gleams whiter or bluer or more delicately yellow than here at Clovelly; no roses, fuchsias, clematis, nor lilies bloom in more profusion; no trees are richer and greener, no vines more luxuriantly graceful, than there. Never a bit of paper litters that one stony street, more staircase than roadway; no speck of dust mars shining windows or spotless curtains; no noise of railroads, of trolley cars, of traffic, breaks the soft stillness of this village of delight.

Plodding up the street on little clattering hoofs comes a string of tiny gray donkeys, bolting now into one house door, now into another, seeking a level spot to rest, and twitching their sympathetic ears impatiently as each time they are persuaded out and up again. Down the street goes a long procession of tourists arriving by coach from Bideford or Boscastle, stopping at every house to "Oh!" and "Ah!" and perhaps to buy souvenirs or to eat strawberries and clouted cream.

It is upon these hordes of tourists, who all the summer days go up and down this

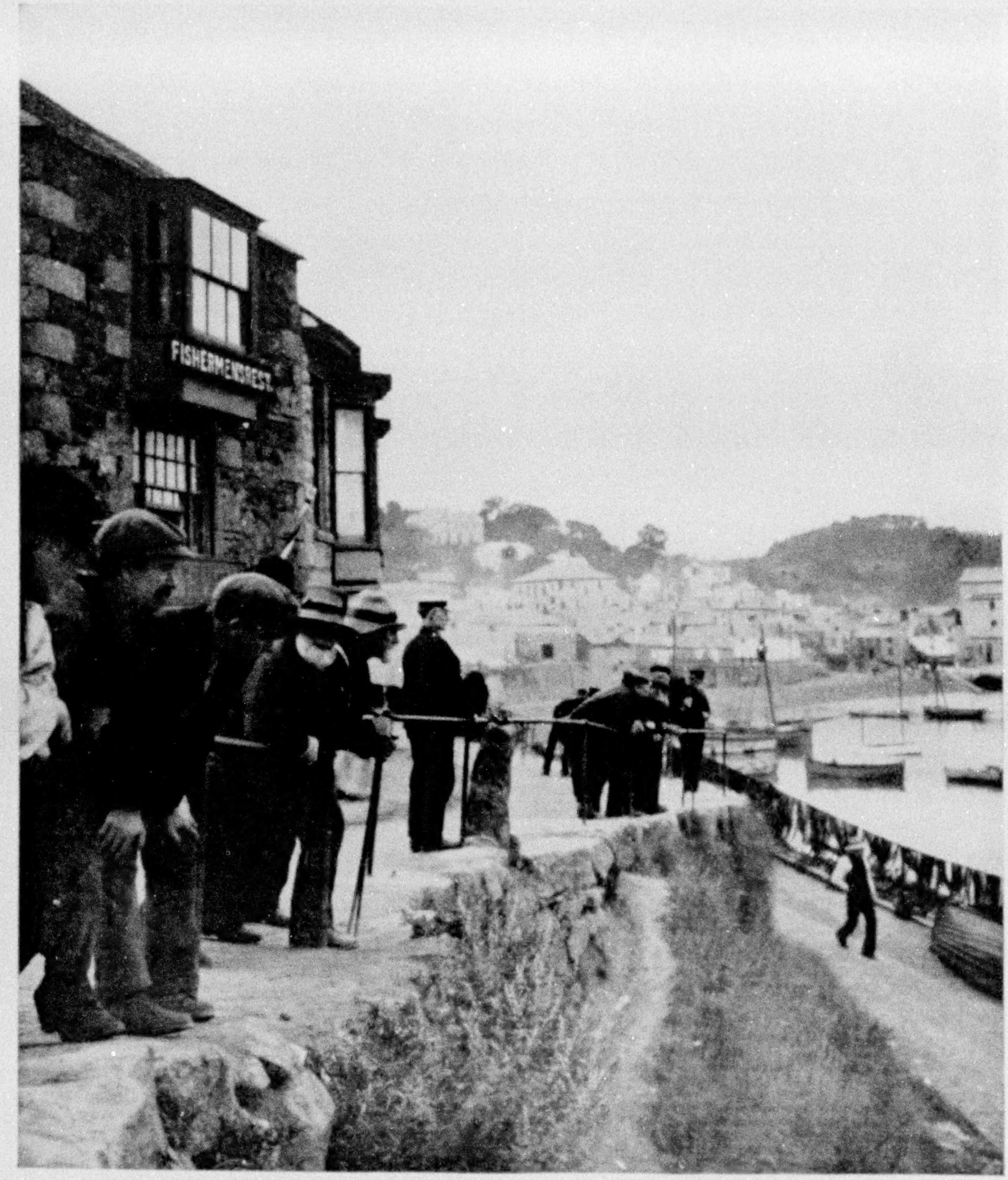

Photo by Emil P. Albrecht

WATCHING THE FISHING FLEET DEPART: NEWLYN, ENGLAND

Every point of vantage on the sea-wall is tenanted when the fleet puts out to sea. There are few young men in the throng, and they are landsmen. One needs to stand near a couple of "ancient mariners" to get the full flavor of the occasion. No trick with rudder or sail escapes those critical eyes and tongue.

"Cornish mariners built up the first great English navy before the Devon sea-dogs and Sir Francis Drake took it in hand. And there are no better or braver seamen today than these who in tiny boats brave for months the rigors of the Arctic seas that their families may live" (see text, page 8).

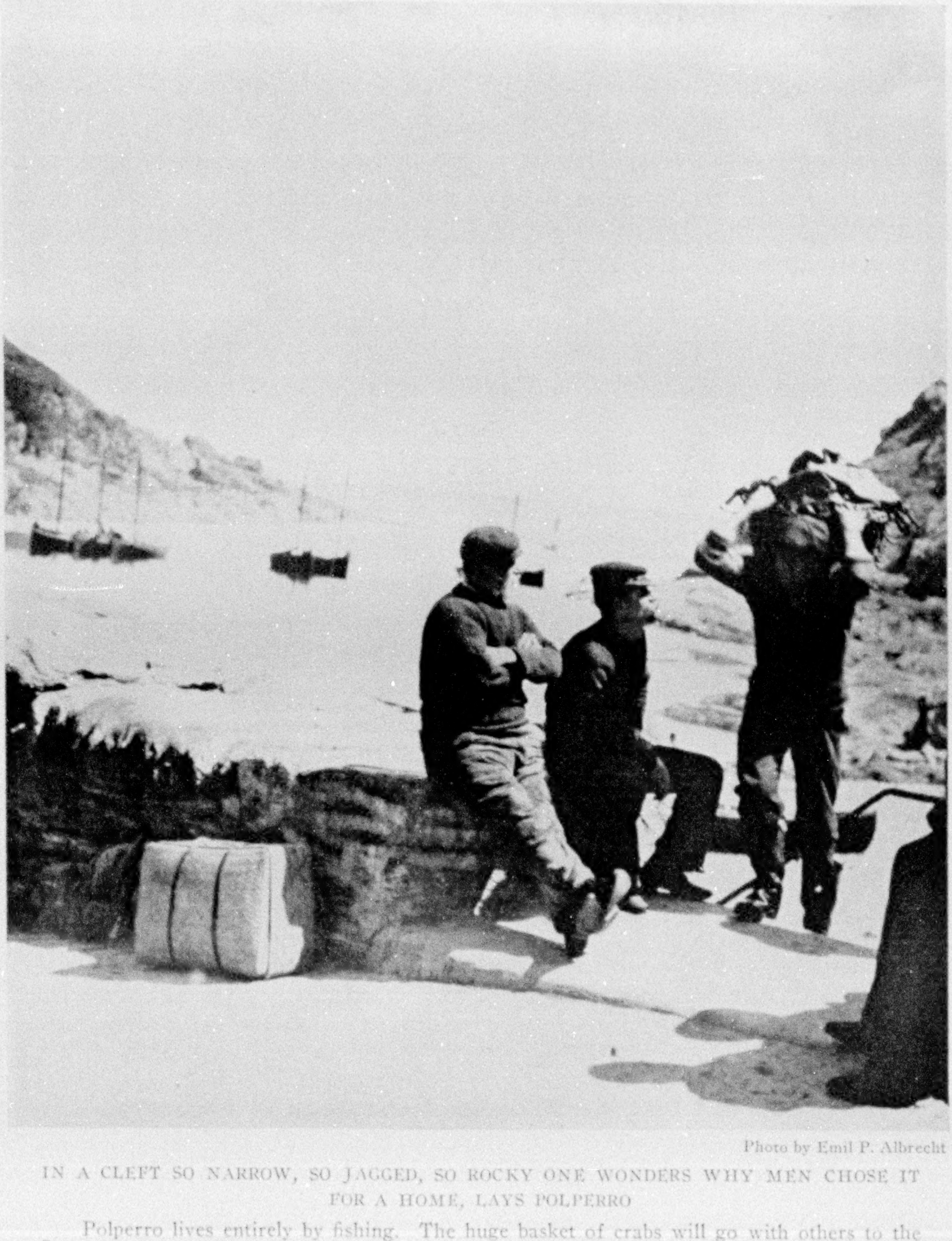

Photo by Emil P. Albrecht

IN A CLEFT SO NARROW, SO JAGGED, SO ROCKY ONE WONDERS WHY MEN CHOSE IT FOR A HOME, LAYS POLPERRO

Polperro lives entirely by fishing. The huge basket of crabs will go with others to the London market. Polperro harbor presents difficulties to the boatmen; the cliffs close in steeply and narrowly, the current runs strong, and the tides rise high. It is only around high tide that the inner harbor is accessible. When the tide goes out it leaves it bare, almost dry (see page 8).

steep, stony street, that Clovelly lives. It seems a resort, a most charming, most lovely resort, a place of day excursions rather than of serious business. It has had, like every other British port, its share of very serious business in the earlier days of history, when men-of-war were small; it may still, on other than summer days, go vigorously about fishing; but in pleasant weather its largest profits are derived from the Bristol boats and the Bideford coaches, which deposit a constant stream of visitors at the top and bottom of the comb.

THE LAND OF "LORNA DOONE"

Very different from Clovelly is Lynmouth, farther eastward on the Bristol Channel; for although Lynmouth states frankly that it is a resort—advertises itself as such—it seems to be sufficiently occupied with other things not to thrust it insistently on the visitor. Lynmouth lies in a valley down which a river, or rather a combination of two tiny rivers, comes to the sea; and, as in all of these warm, moist valleys, vegetation thrives amazingly, Lynmouth, too, is wreathed and draped in bloom (see page 32).

On the cliff above her head is her twin sister, Lynton—breezier, bolder. It is a difficult tourist who cannot be satisfied at one or the other place. But of sea tales one hears less here, perhaps because it is the land of "Lorna Doone," and all paths lead back inland to the spots that Blackmore made famous (see page 30).

Yet in another generation this and many another little port upon this coast may have tales enough to tell; many a load of shipwrecked men may put in with reports of submarines. For such as these the tiny ports will be a welcome haven. If they can send no ships to the war, they can help to save men. Ilfracombe, Lynmouth's neighbor, has already given service, castaways from the *Dumfries*, torpedoed off Hartland Point, landing there. Appledore, just beyond, would also be a good port (see pages 33-35).

At Clovelly one must read Charles Kingsley, if never before; his father was rector there, and no reader of Westward Ho! can hear again with indifference the name of Appledore. But we may not tarry now; we must get back to the south coast, but let us do it by way of Boscastle and St. Ives.

We are in Cornwall once more, soon after leaving Clovelly; we will shun Hartland Point, and Bude will not long detain us, although it has some pretentions to popularity. It has a sizable harbor, but a dangerous one. This coast, exposed to the whole direct force and fury of the Atlantic, is known as the "Ships' Graveyard," which tells the tale. Boscastle, south of Bude, is charming. In the clear waters of its tortuous but lovely harbor baby seals play, their smooth, round heads and shining eyes sometimes startling the swimmer out for his morning dip (see pages 38-39).

"MEAT AND 'TATIES"

Seals recall one of Mr. Hawker's stories. Long ago he and a friend came hungry into Boscastle and Jean Treworgy fed them on "meat and 'taties." "Some call 'em '*pur*taties'," she said, with the same sniff that a Devonshire farmer gave when his son spelt " 'teddies" with a "p."

The meat was good, juicy, tender, savory, but neither the parson nor his friend could guess what it could be. They asked Jean. "Meat and 'taties" was all her answer. Beef it was not, veal, nor sheep, nor pig. Could it—could it be "Boscastle baby"? Hawker rushed to the kitchen. "Meat and 'taties," repeated Jean.

In an ancient book it is written: "The sillie people of Bouscastle do catch in the summer seas divers young soyles (seals) which, doubtful if they be fish or flesh, conynge housewives will nevertheless roast and do make thereof very savory meat." So they called them "meat," or "Boscastle babies;" but the tourist and the seal are both safe today—one eats them no more.

KING ARTHUR'S CASTLE (PAGE 40)

At Tintagel more than at any place, perhaps, what we bring measures what we take away. Come full of the Arthurian legend; come with Tennyson, with Hawker, with Mallory, and, in spite of

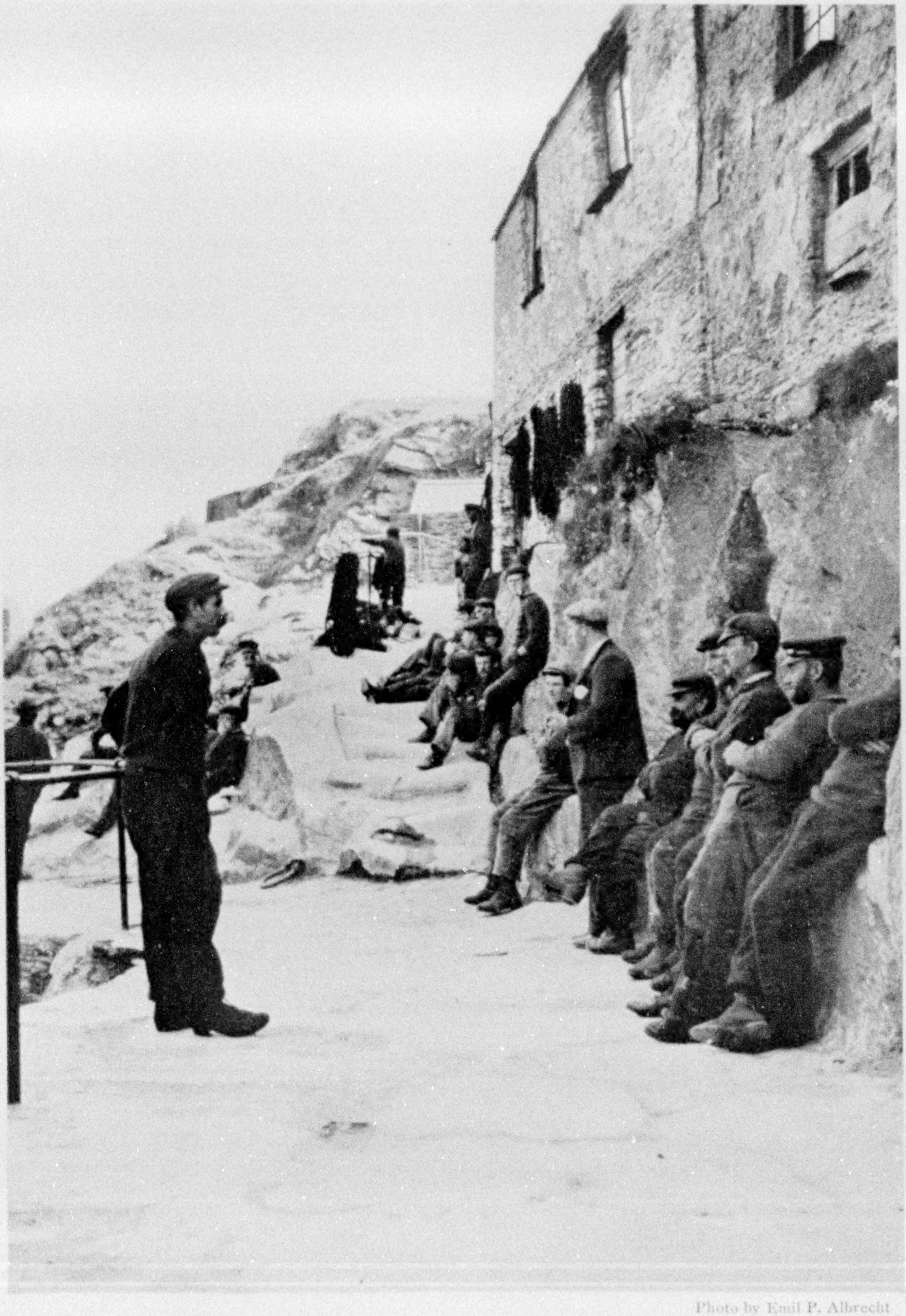

Photo by Emil P. Albrecht

FISHERMEN OF POLPERRO, ENGLAND

The houses at Polperro perch as best they may on ledges of rock, their foundations; the staircases by which they are reached are hollowed from the rock itself. The men are not idlers—the tide is out, the harbor bare. They must wait for the sea to float their boats.

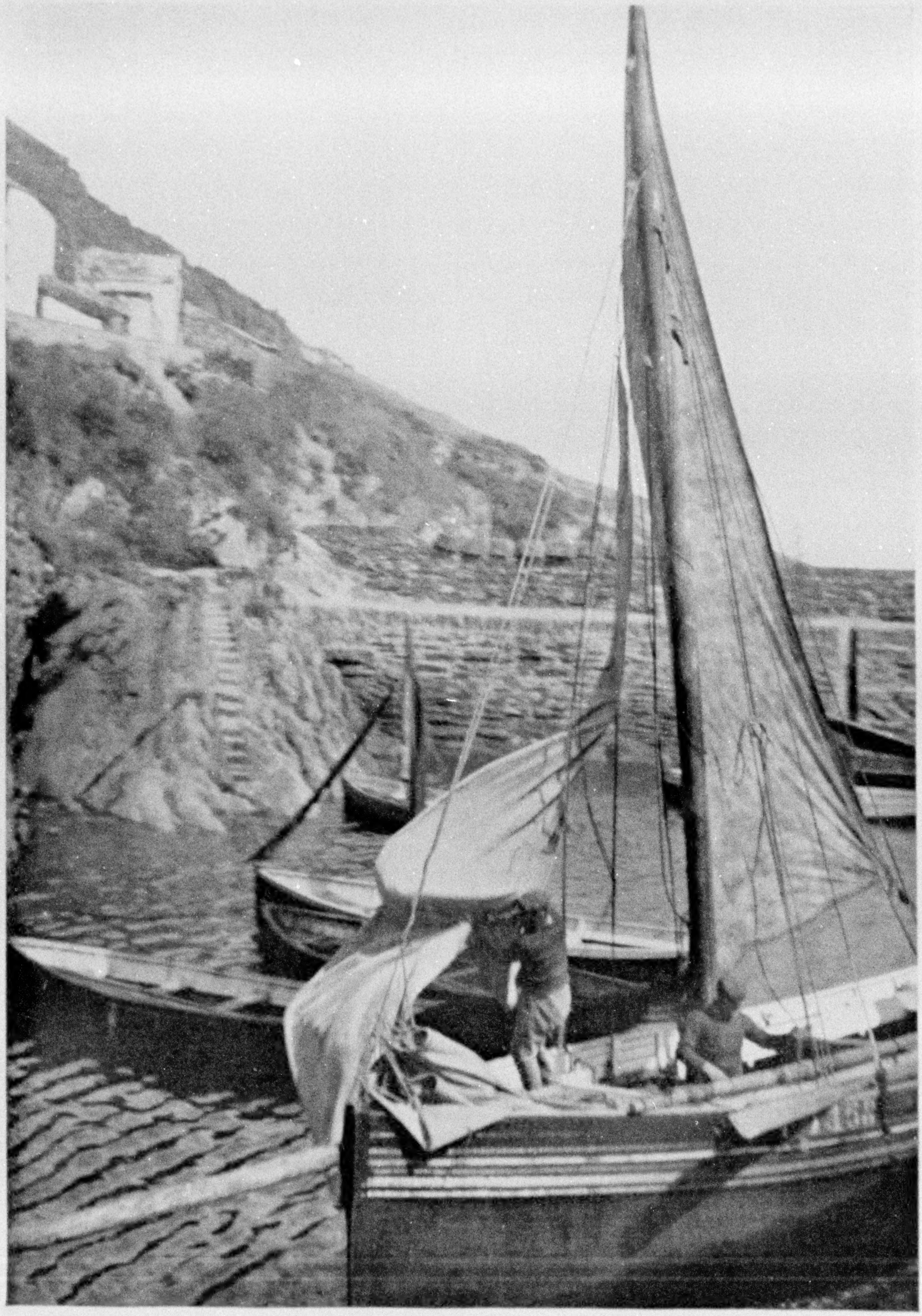

Photo by Emil P. Albrecht

MAKING PORT: POLPERRO, ENGLAND

It goes without saying that Polperro men are fine boatmen. One glance at the port, with its rocks, its breakwaters, its narrow stone-walled entrance, would prove that

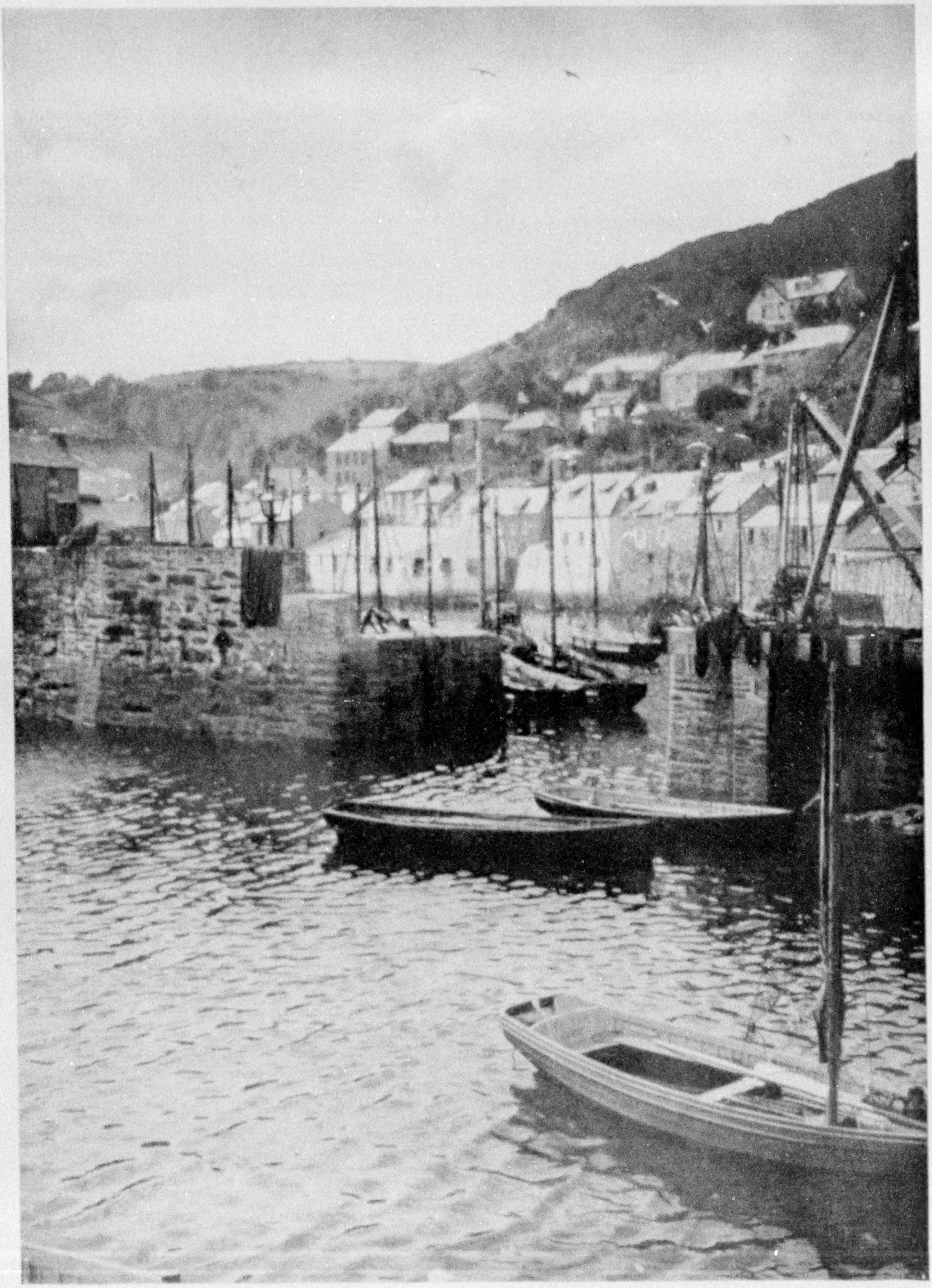

Photo by Emil P. Albrecht

THE ENTRANCE TO THE INNER HARBOR: POLPERRO, ENGLAND

The photographer stood on a similar stone breakwater. The narrow entrance can be closed in time of need by huge beams let down in grooves. By the thickness of the stone walls one may measure the strength of the winds and waves in winter storms.

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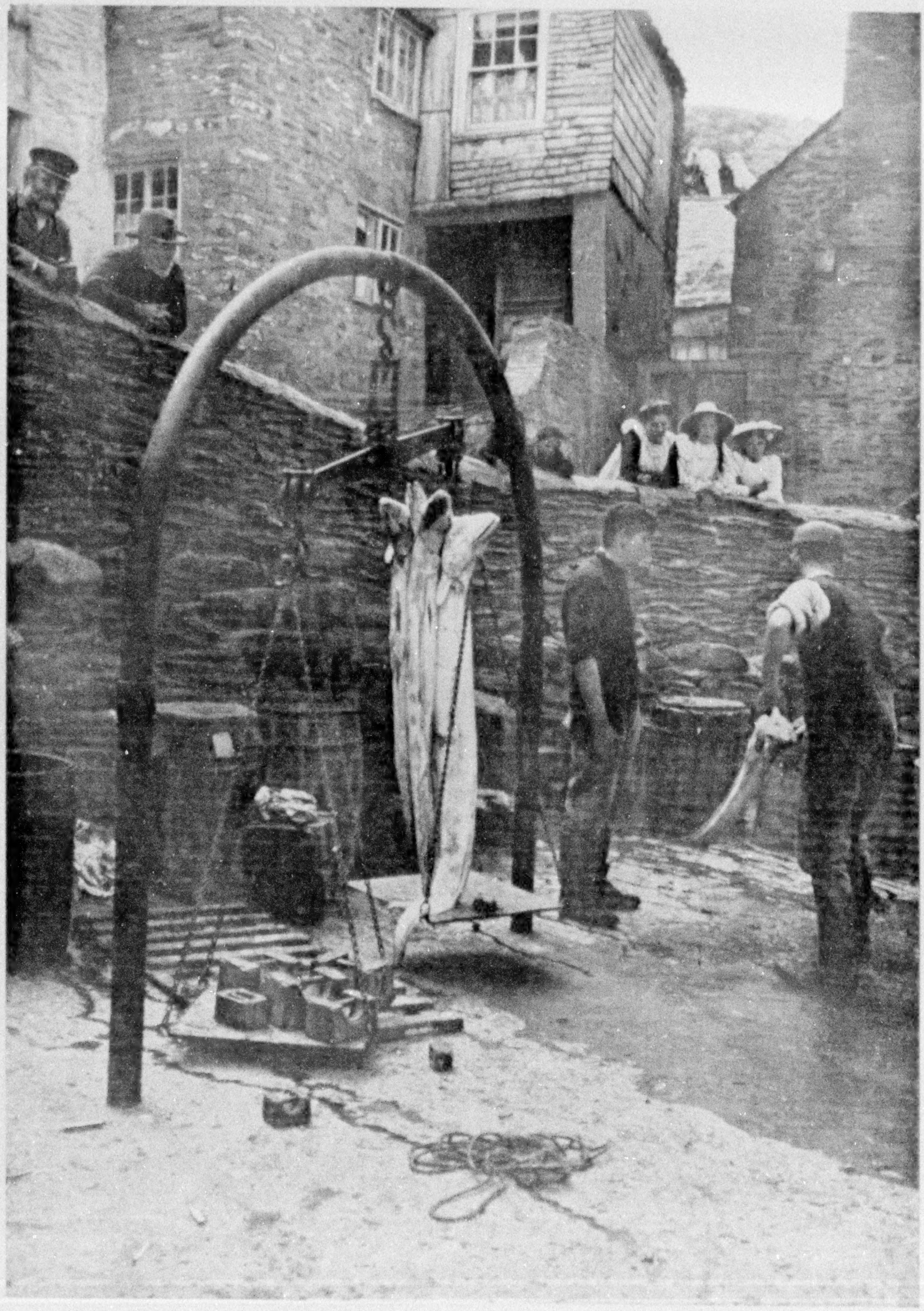

Photo by Emil P. Albrecht

WEIGHING CONGER EELS: POLPERRO, ENGLAND

Polperro lives by fishing, and a large part of her catch are conger eels—huge, unpleasant, ghastly white creatures that Cornwall considers delicious, especially when transformed into conger pie. Here we see them being weighed in bunches of four on the great scales on the fish-house quay. They can attain a length of 10 feet and a weight of 100 pounds, but the majority run about 6 feet and 60 to 70 pounds.

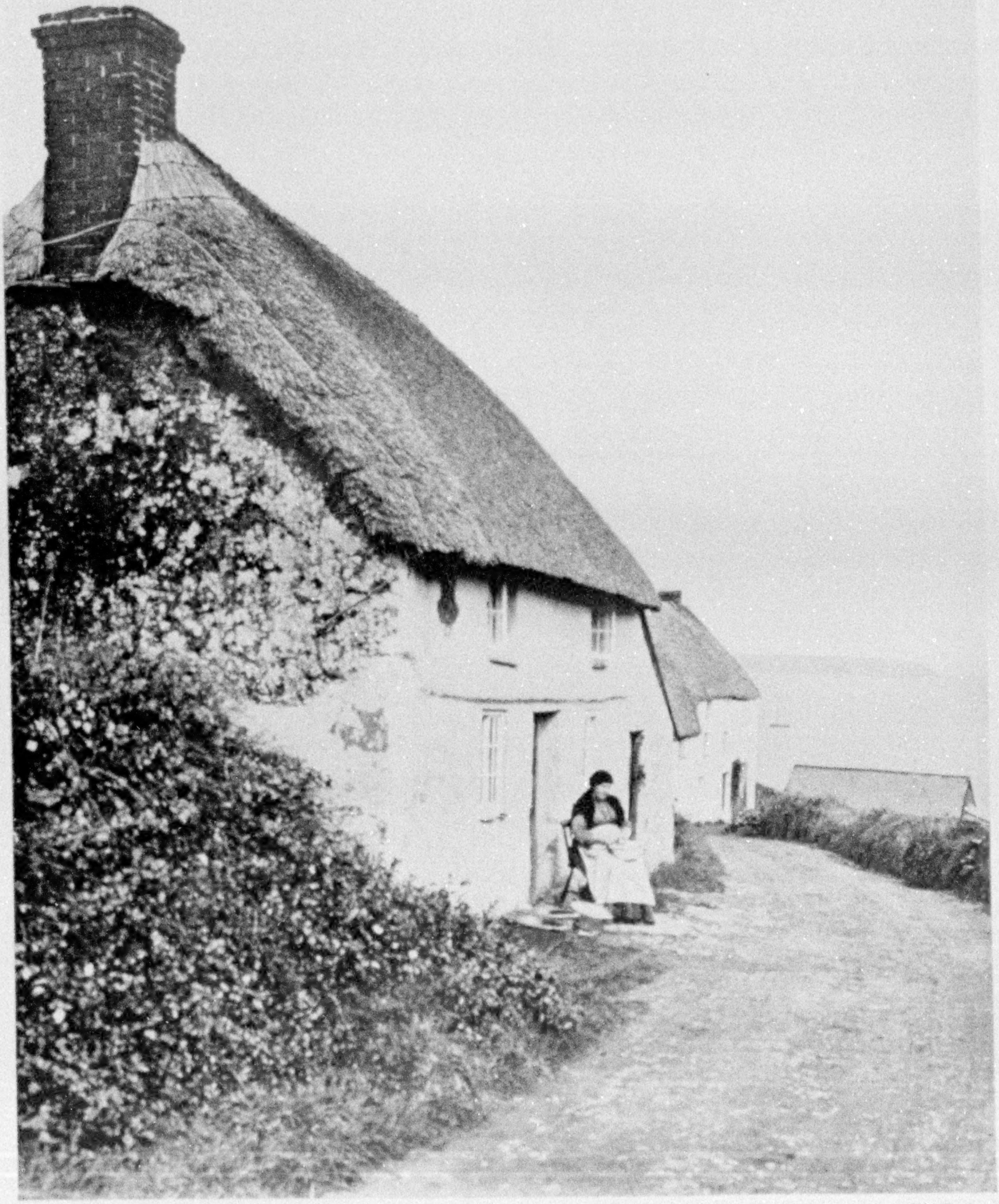

Photo by A. W. Cutler

THE ROAD TO THE SEA

This is a scene at Church Cove, Cornwall, one of the very few villages in Cornwall that has not lost its old-world charm. The lower whitewashed cottage was at one time the only inn in Cornwall and was a favorite rendezvous for this section of coast in the old smuggling days.

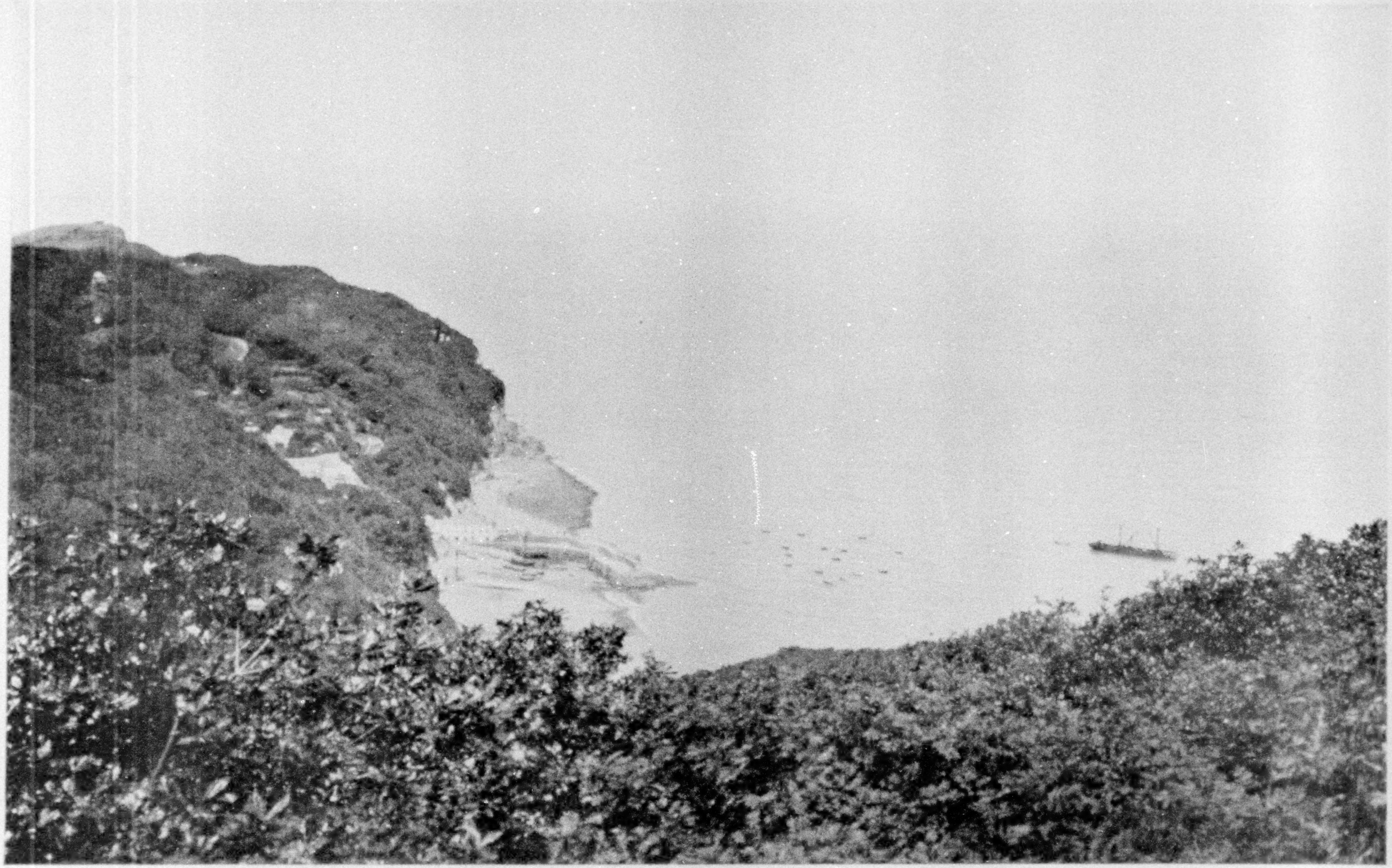

Photo by Emil P. Albrecht

CLOVELLY, THE MOST EXQUISITE VILLAGE IN ENGLAND

Clovelly from "Hobby Drive," a beautiful private road running for three miles through luxuriant forest high above the sea. In the picture can be seen the little harbor, then dry, the stone pier, the pebble beach, and Red Lion Inn; but the cleft in which the village lies is so narrow and deep that above one glimpses only a house or two (see page 15).

"modern criticism," you will savor nought but romance.

Bring history as a companion if you will; learn that here was the home of ancient earls; that the cliffs are the highest, the surf the strongest, in all Cornwall; that the ruined castles are Norman, the ancient church Saxon; but no longer can you hope for vision of the "Blameless King;" see his knights climb to the castle or talk with the Cornish chough, the red-footed, red-beaked raven that Tintagel calls "King Arthur's soul."

Once there was a day when every rock-marking in eastern Cornwall spoke of Arthur, when every wave lapping its western shore babbled his name. The actual Arthur may have been but a petty British king "living in the dark interval between two civilizations," but his name lives immortal, unlimited by race, or state, or clime, in every heart which reveres chivalry, honor, and truth.

Can you see them, hear them, Arthur's knights coming up to sit at the round table? Is it only the thunder of the long surf far below, the shriek of a gull, the chough's call that reaches your ear? That silvery chime is the sunken bells of Forrabury, pealing far below the sea; that swift-winged boat is the *Black Prince,* whose daredevil master was the terror of the coast. Take the key, climb above to the door of the old keep, and high above sea and shore look and dream if you will.

Here are the ruins of Tintagel about you; across the chasm the yet more formless remains of Terrabil, the twin fortresses known to the earliest Cornish earls. Roman, Saxon, Norman has built here; but it is not for architecture or archæology that one comes here; it is for romance. "It befell in the days of Uther Pendragon"—yes, we all know Mallory's story; but why, oh why did "Gourlois of the Purple Spear" lock himself in one castle and his wife in the other? There are many questions at Tintagel that are never answered (see page 40).

It is no soft landscape here. A high, bleak, wind-swept cliff, dropping sheer to the sea, which pounds it perpetually; but such a sea—turquoise, green, sapphire, violet, spread with clear, lace-like foam, or lying smooth and still beneath the cliff's purple shadows. Into the sharp rock-cleft it runs with savage force and sends huge clouds of spray to lick the wet, black rocks above.

Higher upon the steep sides the turf grows short, but thickly, and topaz-eyed sheep pasture fearlessly in the smell of the salt spray. But no longer Ygrayne walks sad-eyed upon the terrace, thinking of her dead lord, nor Guinivere watches impatiently that way which Launcelot should come, nor Arthur marshals his knights. There are tourists, and that is all. Yes; one must bring romance to Tintagel if one would take it away.

PICTURESQUE ST. ISAACS

Tintagel is not a port. Occasionally a boat comes in under the cliff with supplies for the village, but houses are few and there is little fishing. Port Isaac, farther down the coast, is, I was about to say, a typical Cornish port; but I fear I have said that of another. It *is* typical. They are all alike and unlike. I think the steepest carriage road it has ever been my pleasure to descend comes down into Port Isaac; and the little stone houses of the village cling to the sides of the ravine as best they can.

As a harbor we should not approve of it, yet it has served a fishing fleet for 400 years. Pleasant enough it is of a summer day, but in spring or autumn storm, when the waves come hurling in with appalling weight and force to suck out again, as if they would drag the village into the depths, when the fleet jockeys for hours in the trough of a vicious sea, unable to make the opening between the black cliffs, yet in constant peril of the surf, one can but wonder why men made a home there (see page 46).

THE "REAL" ST. IVES

Now St. Ives is different. Storms are just as severe there, of course, but the harbor is better protected. The tides are too great in these Cornish ports to be manageable. They are deep enough at high water for large vessels, but a few hours later they have gone out completely and left the sands bare. One

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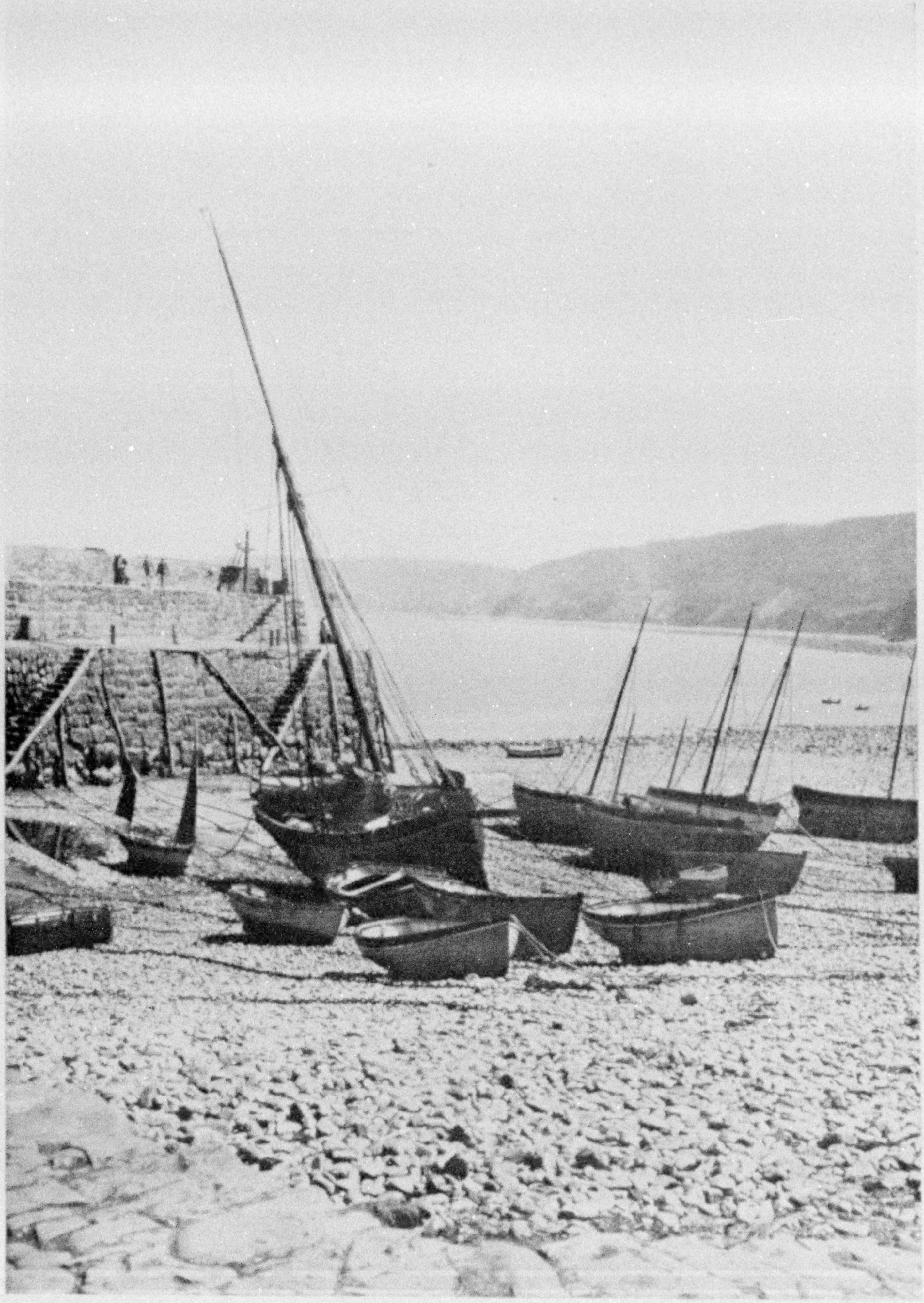

Photo by Emil P. Albrecht

CLOVELLY HARBOR WHEN THE TIDE IS OUT: CLOVELLY, ENGLAND

This is what Devon calls a "pebble beach," but the pebbles are what Philadelphia, in the days before asphalt paving, knew as cobblestones. There is much of this on the Devon coast, and the sound of the water rushing through and over them with the change of tides is one that is never forgotten.

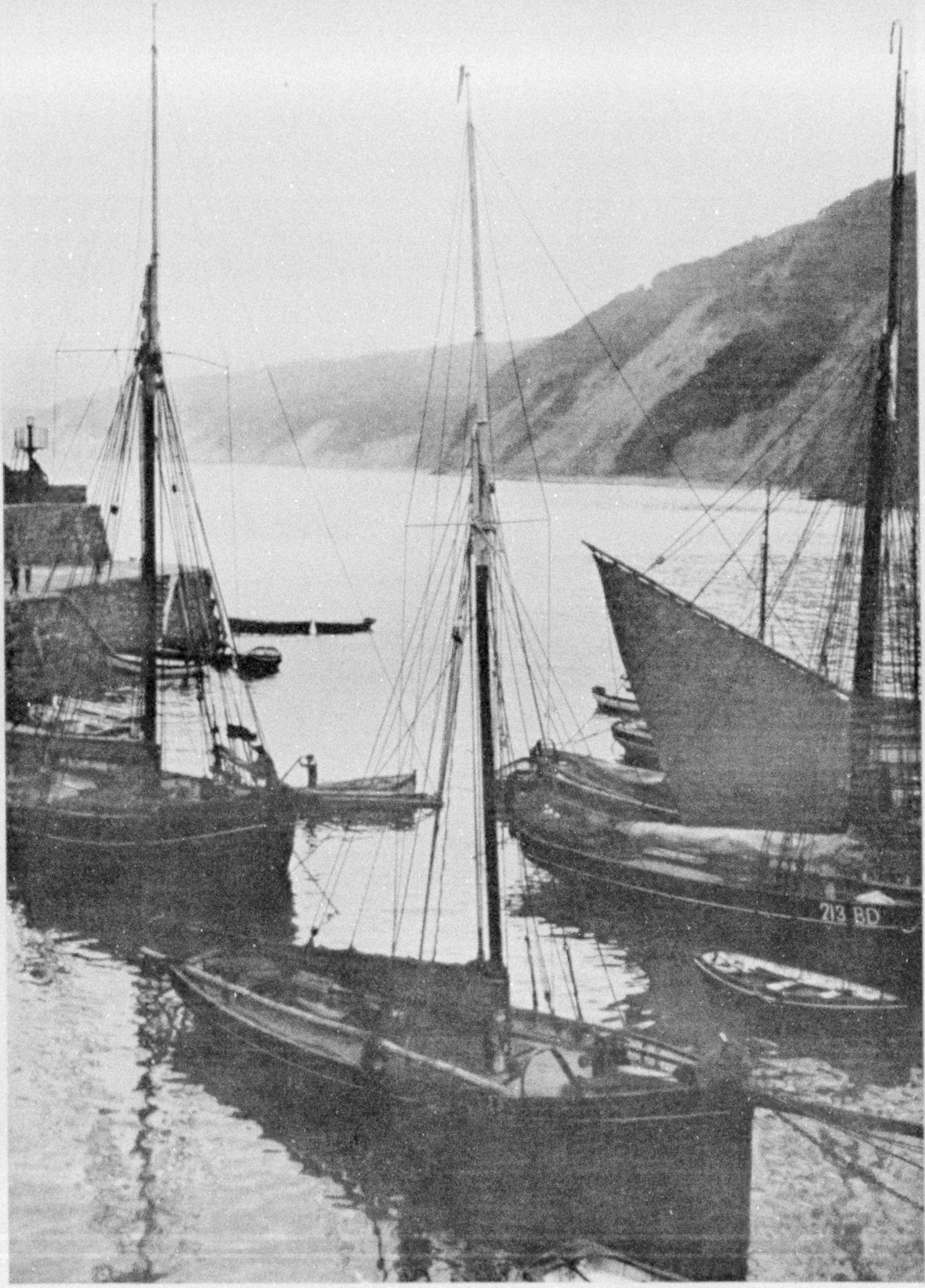

Photo by Emil P. Albrecht

CLOVELLY HARBOR WHEN THE TIDE IS IN: CLOVELLY, ENGLAND

The boat marked 713 B. D. is probably from Bideford. The little stone pier is a favorite lounging place at sunset. Clovelly has had, like every other British port, its share of very serious business in the earlier days of history, when men-of-war were small.

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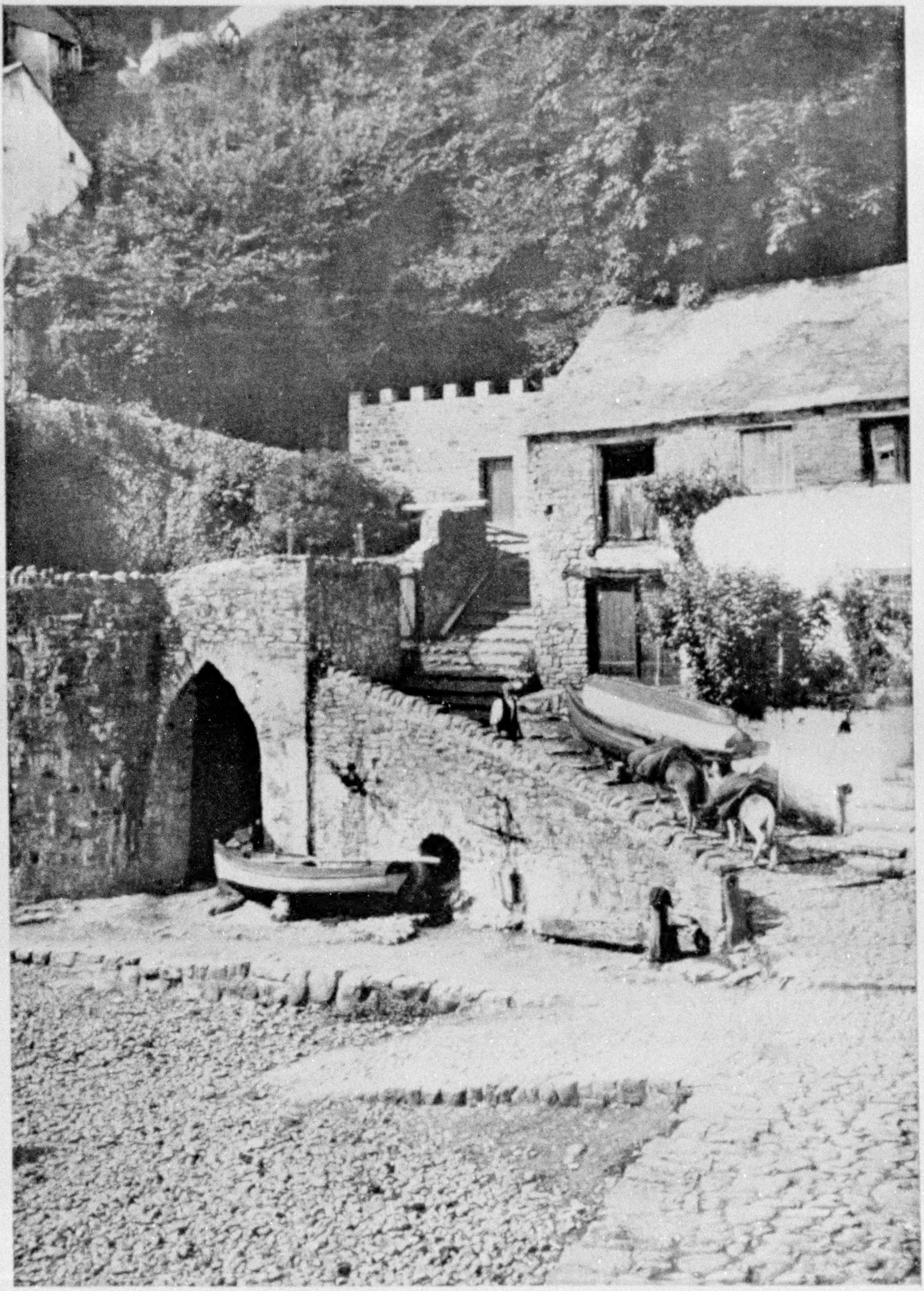


Photo by Emil P. Albrecht

BEGINNING THE CLIMB FROM THE SEA THROUGH THE VILLAGE: CLOVELLY, ENGLAND

The narrow little street twists and turns and at one place, Temple Bar, passes directly beneath a house. It is lined with stone cottages, tiny gardens, stately trees, and embowered in flowers that bloom with incredible luxuriance. The tiny donkeys are carrying sacks of coal from a boat to some householder up the hill. Whenever an excursion boat arrives they drop their packs and, brushed and saddled, appear in a pretty friendly row by the quay.

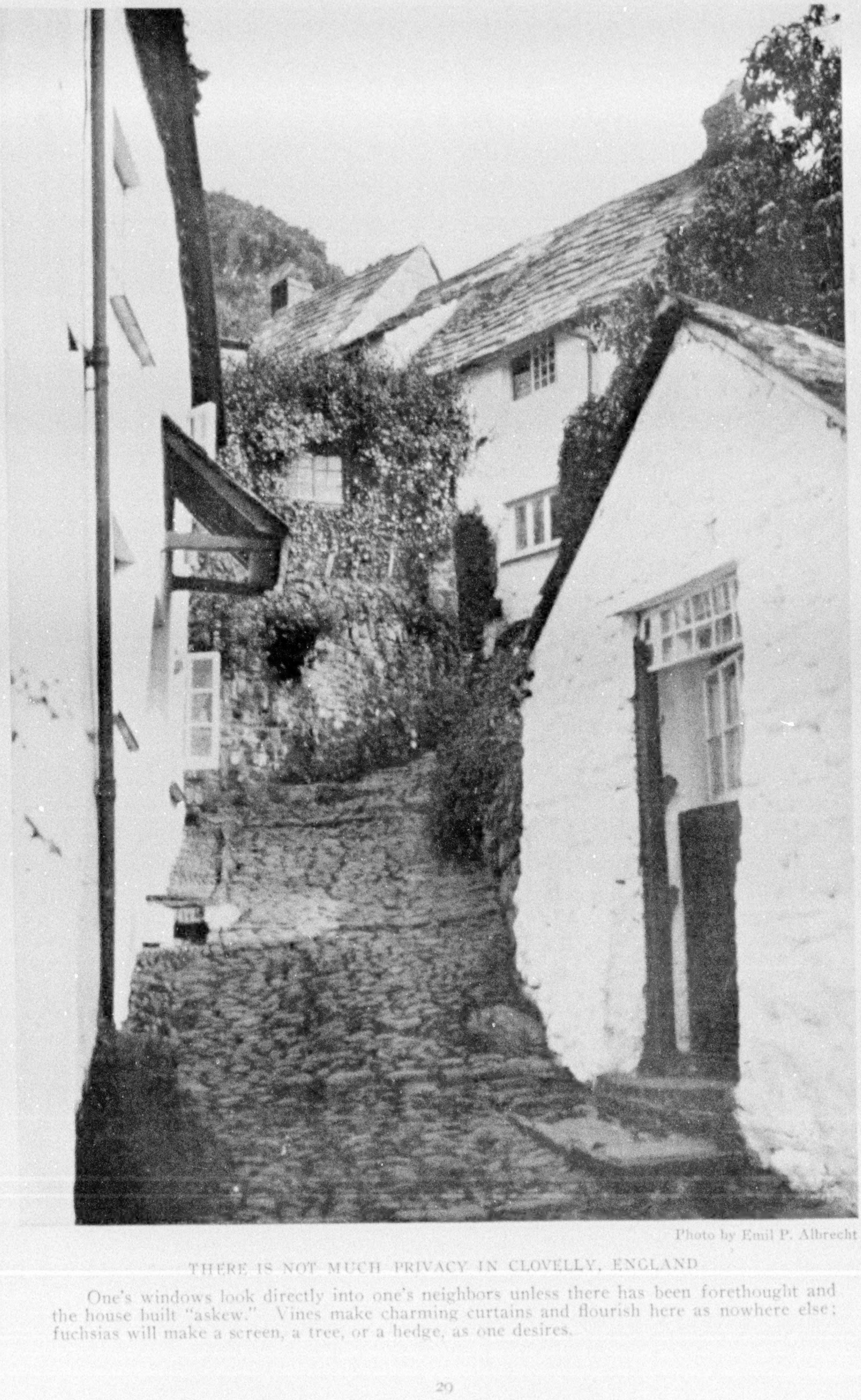


Photo by Emil P. Albrecht

THERE IS NOT MUCH PRIVACY IN CLOVELLY, ENGLAND

One's windows look directly into one's neighbors unless there has been forethought and the house built "askew." Vines make charming curtains and flourish here as nowhere else; fuchsias will make a screen, a tree, or a hedge, as one desires.

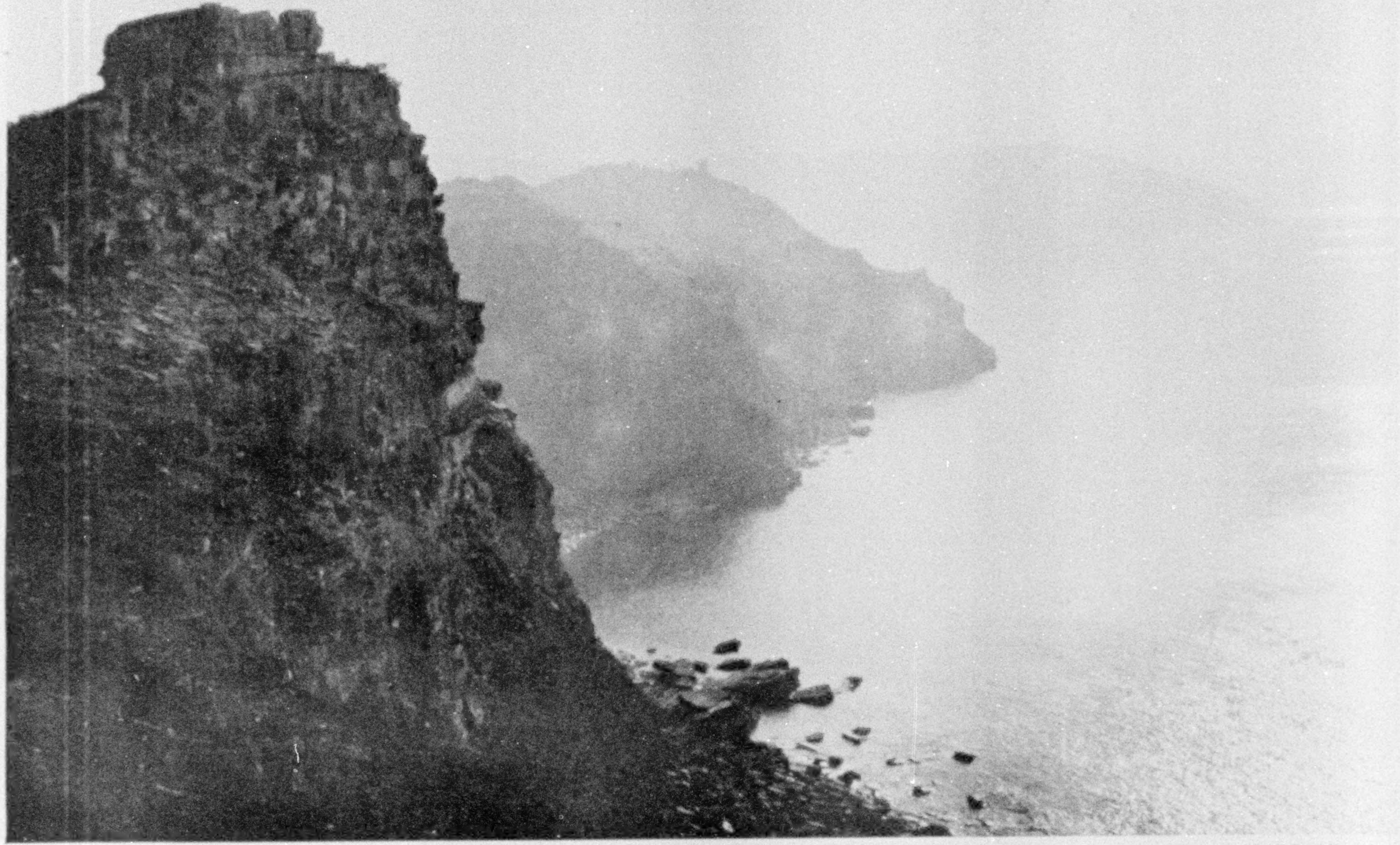


Photo by Emil P. Albrecht

THE CLIFFS AT SUNSET FROM THE NORTH WALK, LYNTON: LYNMOUTH, ENGLAND (SEE PAGE 18) could talk long and lovingly of St. Ives, which has the loveliest bay in Cornwall.

Here is no narrow chasm, where houses squeeze and crowd like swallows' nests and great rocks bar the way. St. Ives sits by a smooth circle of sea into which a tongue of rocky land thrusts a bold curving headland, inclosing an inner harbor in the great sweep of the bay. Here by the sea dwells the "real" St. Ives, close-pressed, low-crouched, stone-built to withstand the worst storms of sea and time.

Up the green hillside climb the summer homes, the villas and cottages and hotels, that belong to the transient St. Ives. As its mean winter temperature is but 4 degrees lower than that of Rome, it has a fair percentage of winter visitors, while in summer its hotels are crowded. St. Ives does not let its visitors interfere with its business, which is pilchard fishing—a picturesque thing to the idle onlooker, but heavy-smelling work for the fishermen—and renting studios.

It has been said that of the 200 or more canvases dispatched each year from Cornwall to London "seven-eighths have been painted at Newlyn or St. Ives." Certainly, in the tangled streets of the little town, wherever a window gives upon the sea be sure an easel stands.

St. Ives gets its name from an Irish princess, St. Ia, who floated thither upon a leaf and landed on Pendinas, the rocky headland which St. Ives calls "the island." "Are there many saints in Cornwall?" I once asked a Cornish friend. "Don't you know the old saying?" he replied. "There are more saints in Cornwall than in heaven." I'm not prepared to dispute it, and certainly the Cornish saints have arresting names and habits.

"A LADY SAINT INDEED"

My St. Ia has been hotly contended, I must admit. "A lady saint indeed!" cried the artist scornfully. "Just go to Brittany and learn what *extraordinary* things St. Ives did there! Things no *lady* saint would have done!" Just as if only masculine saints did extraordinary things!

It was in 450 that St. Ia drifted in on her leaf and suffered martyrdom. The Irish saints had delightful means of traveling. St. Piran came on a millstone. Any one who has seen a Welsh coracle will understand. In Cornish the place is called Porth Ia, and the square-towered church there by Porthminster sands commemorates the name. In its tiny yard is a beautiful old cross dug up a century ago from the place where it had lain for how many hundred years? We like to think it St. Ia's own, but there are those that say it is later, and others who maintain it is older far than she. The stone of it, like that of many another Cornish cross, was probably part of a menhir, those curious druidical monuments frequent in Cornwall and Brittany.

At St. Ives we touch "modern conveniences" once more, and by changing trains twice may reach Polperro's nearest coast neighbor, the two Looes; for they are two, on either side of a trickling "littel broke that cometh down out of the hilles" to the sea, with a quaint old legend-bearing bridge to bind them, like many other Cornish ports.

The houses are in all shades that "whitewash" yields—blue, pink, lavender, corn, or silvery gray—framed in their honeysuckle, roses, and rich trees, climbing the hills upon both sides of the way. Upon the river's east bank there is a level stretch permitting a roadway, but the west bank leaps straight up from the water edge.

LOOE'S BRAVE HISTORY

The towns are not *very* ancient, but before the days of Elizabeth they had sent many boats to the wars with France and Spain. Details of these are hazy in Looe minds, but one thing holds fast—one boat sailing from the port must be a *George*, in memory of a *George* which took three Spanish galleys single-handed in an "international unpleasantness" hundreds of years ago.

There is the island off the western cliff, scene of many adventures in those gay, swaggering days gone beyond recall. Delicious is that one where the fast-sailing smugglers derisively offer the revenue cutter a tow-line. Looe depends upon her summer guests and her fishing-boats, of which about 50 go to the fisheries off the Irish coast. Those fishing-boats,

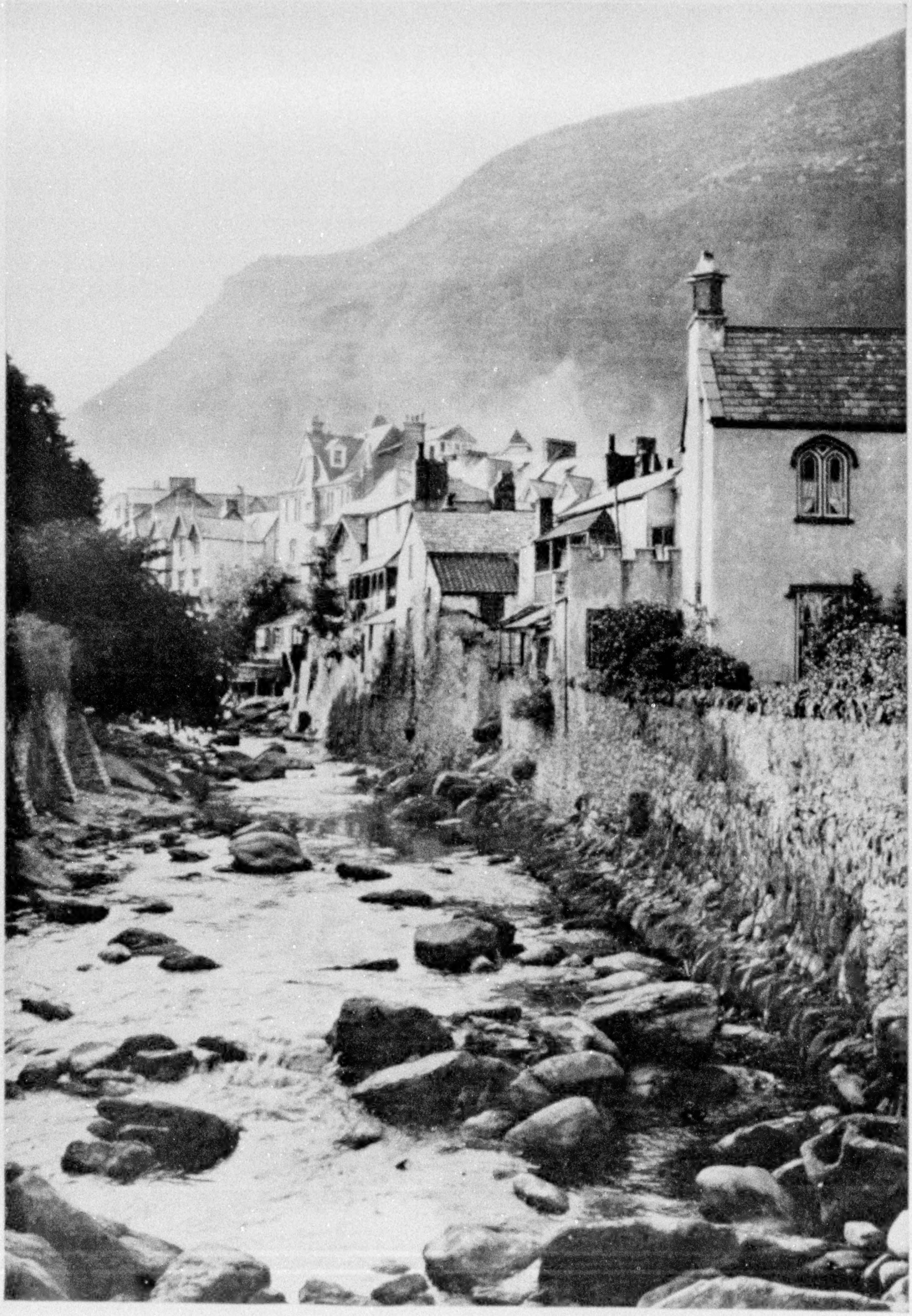
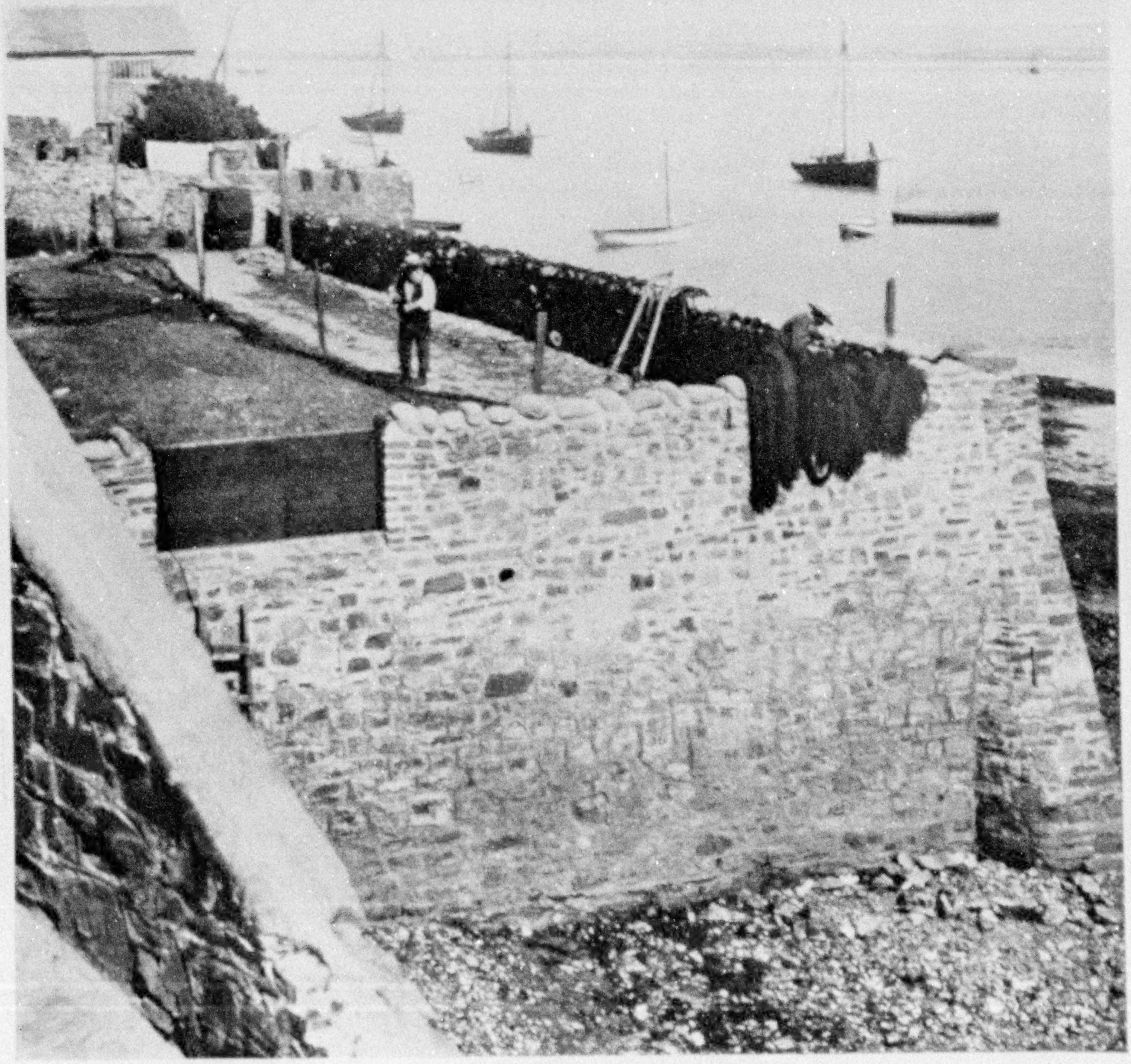


Photo by Emil P. Albrecht

THE LYN JUST BEFORE IT REACHES THE SEA: LYNMOUTH, ENGLAND

It is 5 o'clock, and the tea-kettles are boiling and bubbling, as the smoke from a dozen chimneys testifies. Lynmouth is frequently termed "the loveliest village in England" (see page 18).



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APPLEDORE, ENGLAND: ON THE SEA-WALL, MENDING THEIR NETS

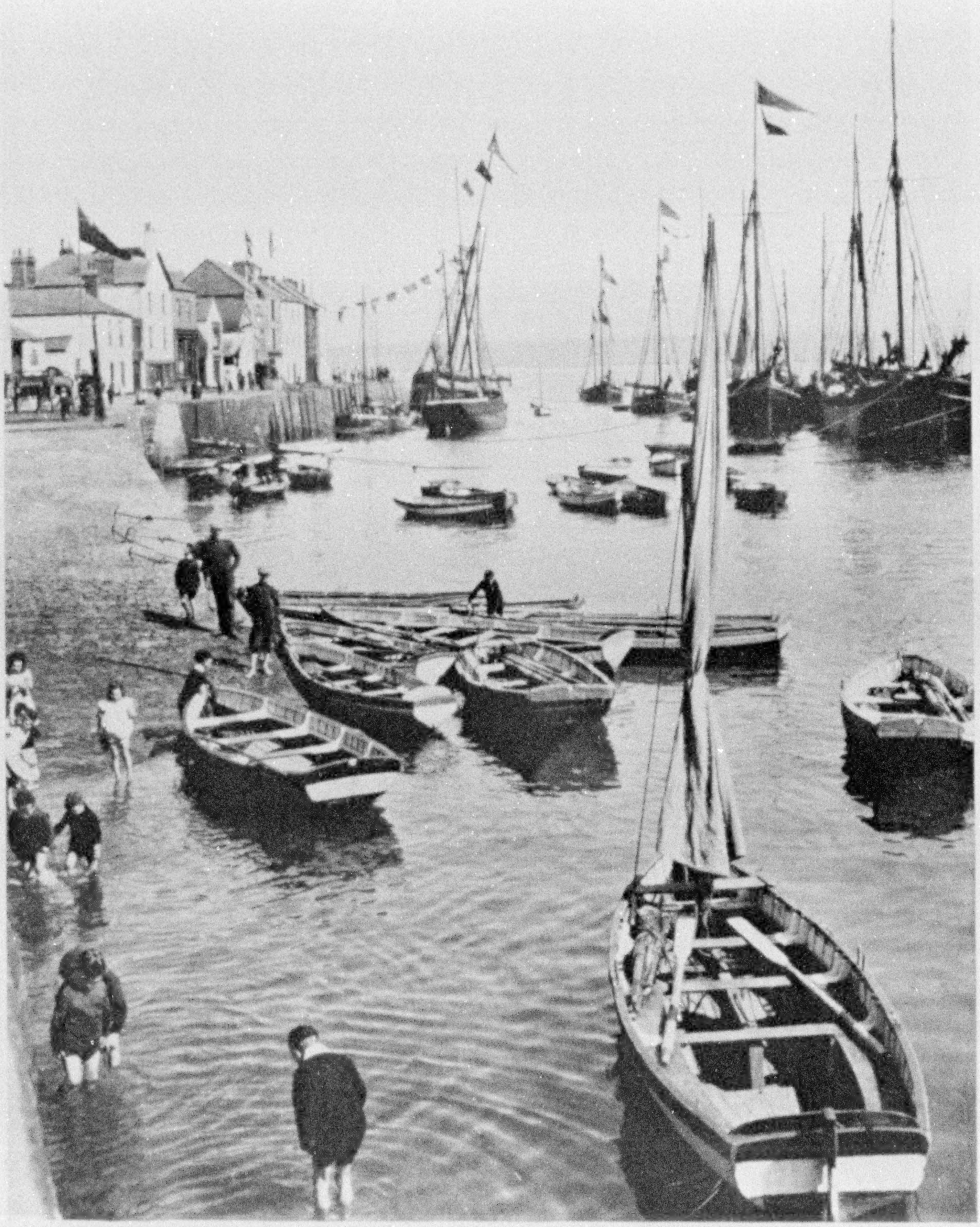

Photo by Emil P. Albrecht

THE HARBOR OF APPLEDORE PREPARING FOR A HOLIDAY: APPLEDORE, ENGLAND

No reader of Charles Kingsley needs introduction to the tiny port upon which he dwelt so lovingly in "Westward Ho." One comes to it from Bideford, "the little white town of Bideford sloping upward from its broad tide-river," and hears here "the everlasting thunder of the long Atlantic's swell." Bideford is, I think, the nearest railway station for Clovelly (11 miles), the usual one, at all events, and Appledore is but a few miles away on the coast.

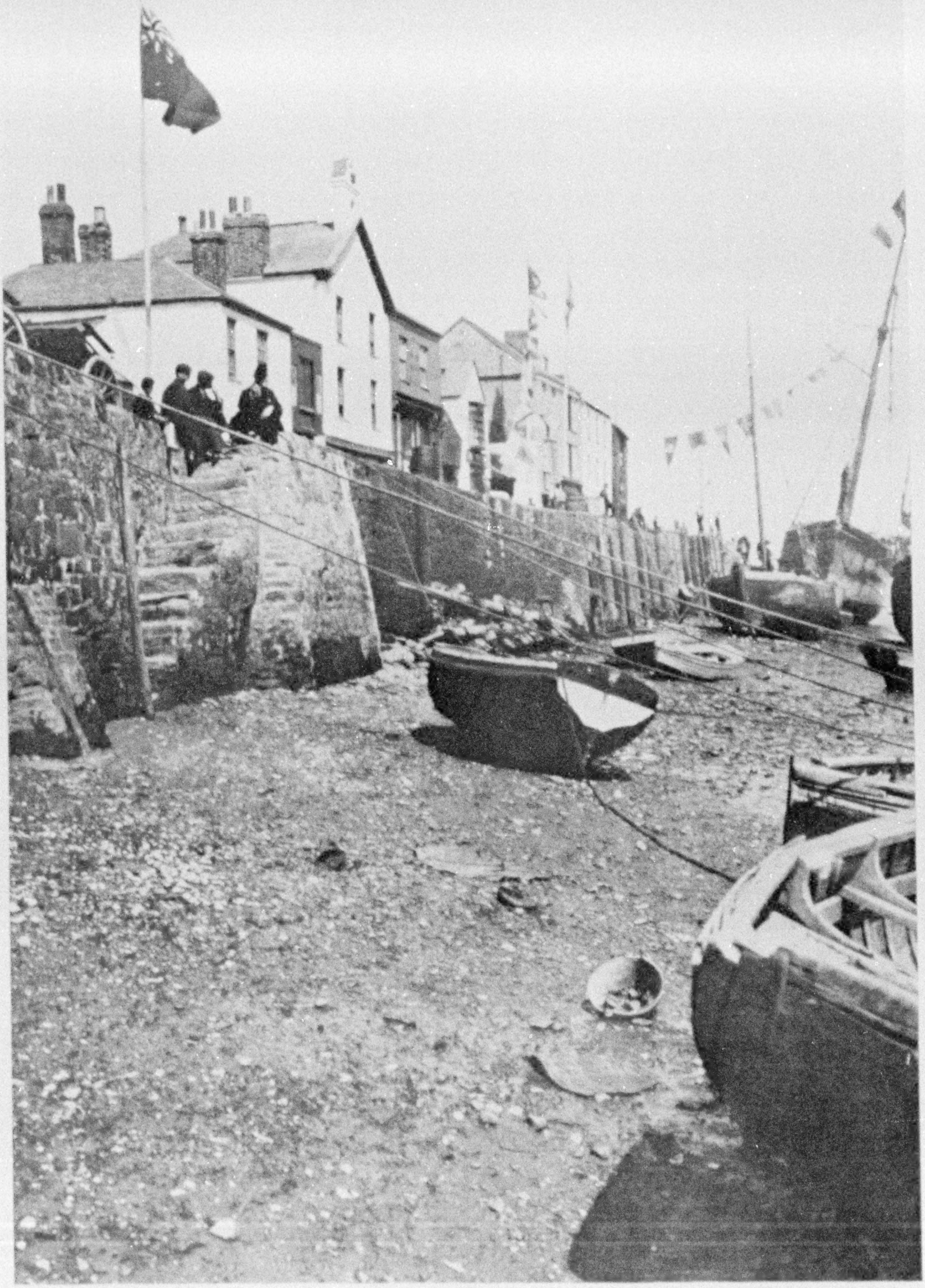

Photo by Emil P. Albrecht

WHEN THE TIDE IS OUT AND THE BOATS SETTLE TIPSILY ON THE SANDS: APPLEDORE, ENGLAND

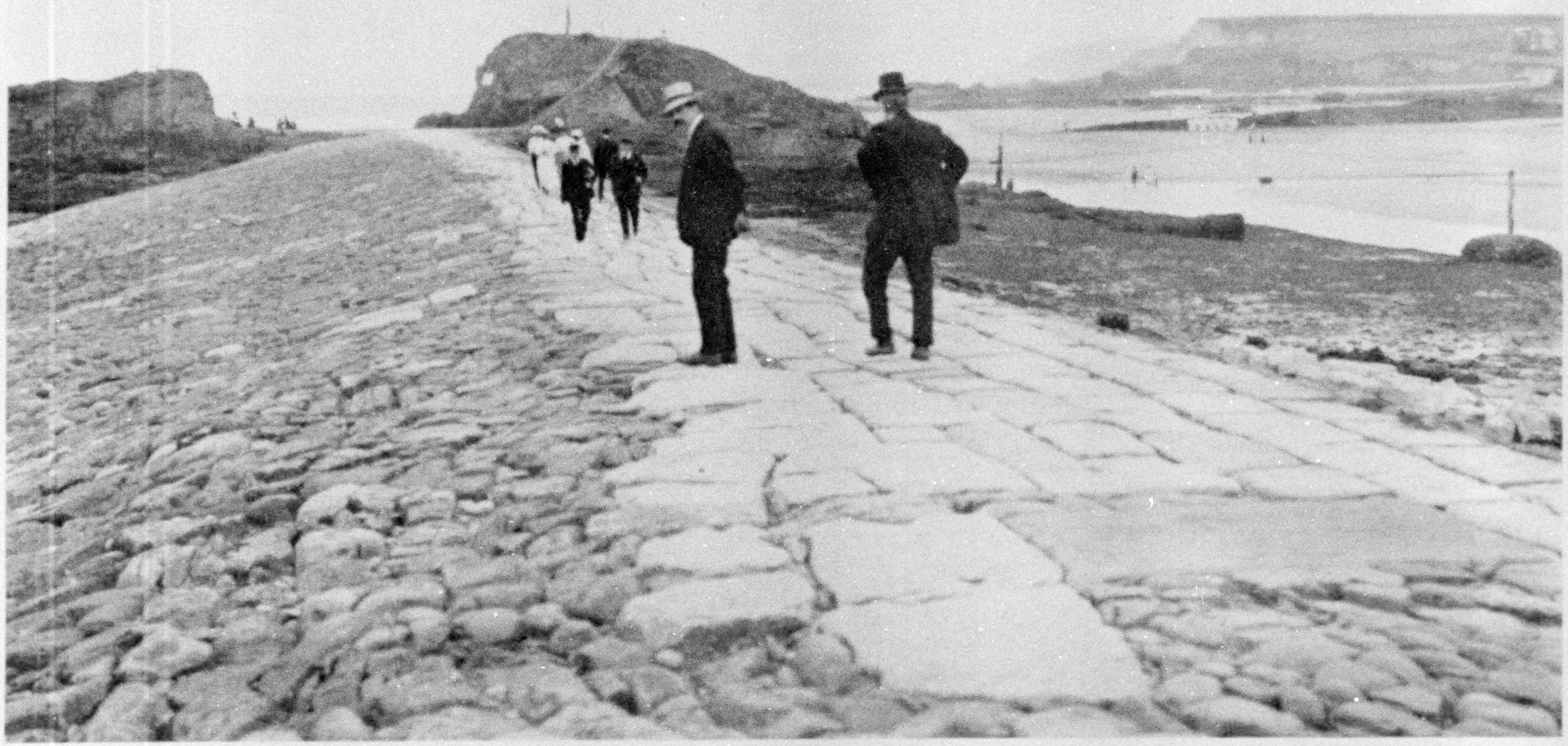

Photo by Emil P. Albrecht

BUDE: ENGLAND

Bude's harbor is protected by a broad dike or breakwater—a pleasant promenade on summer days, but a very dangerous one in high winds and tides. "It has a sizable harbor, but a dangerous one. This coast, exposed to the while direct force and fury of the Atlantic, is known as the 'Ships' Graveyard,' which tells the tale."

which seem so insignificant to us, are but little smaller than the fleet which went to meet the Spanish Armada here near Looe. Few boats carried a score of men. How incredible it seems!

BROKEN LEGS THAT REQUIRE NO AMBULANCE

It would be a pity to see these tiny ports for the first or only time at low tide; but sometimes there is no help. Then, if one hears a hoarse voice calling that Sallie or Lizzie or Margret "'ave broke 'er leg!" "'Er 'ave broke 'er leg!" one need not wish for an ambulance. Every boat is provided with crutches or "legs" to hold it level when the sea leaves it on the sand. When a leg breaks the vessel keels over on the ooze, messing things up inside, and all hands must turn out to right her and mend the broken crutch; but if the tide be high and the sea reasonable, it were well to take boat and sail up the coast to Plymouth, where our big steamer long since came in.

Let us hope that the sunset was turning to rose and gold the tall white shaft on Eddystone; that the sea and sky were softly glowing like the heart of an opal, and the green hills about the sound, the "monstrous lump of granite," which is Dartmoor, purple in the distance, the town itself gleaming white in the dusk and sprinkled with lights like stars, are all bathed in that level liquid light that transfigures most prosaic objects in a northern landscape and makes of the loveliest harbor in England the most entrancing one in the world.

MAYFLOWER MEMORIES

One after the other the little Cornish ports bore the proud title of first in all England and laid it down; there is none today that can compete with this, their great Devonshire neighbor, whose rise has been constant since the days of Hawkins and Drake. Three towns form modern Plymouth—Devonport, Stonehouse, and Old Plymouth—divided from each other and bitten in by much blue water, which is now river mouth, now sea estuary, with considerable naval history of various kinds.

But the casual visitor troubles himself little with the stone streets and stone houses of the towns; it is the sound and its tributaries that engage his eyes. To the right, as one enters, the Cattewater, the mouth of the Plym, tucked in beneath the citadel; Sutton Pool, the home of small craft of many kinds, fragrant with fish and *Mayflower* memories; the docks of the London and Southwestern Railway; then the broad stretch of the Hoe, Plymouth's ancient bowling-green and present promenade, with old Eddystone lighthouse ending its days ashore as a view-tower; Sir Francis Drake challenging attention from his pedestal, and Britannia, as Mr. Howells says, "leading her lion out for a walk; lions become so dyspeptic if kept housed and not allowed to stretch their legs in the open air!" Upon the pedestal is written: "He blew with His winds and they were scattered." Britannia lays no claim to defeating the Armada all alone. One makes no criticism there, but a few trees would improve the Hoe.

Plymouth has a very considerable merchant trade, but she lets nothing interfere with her position as a fortress of the first class and naval arsenal. She has only grudgingly permitted ocean liners to use her as a port of call, and none come far up the sound nor tarry longer than to discharge mail and passengers. She has various reasons for not desiring them; they interfere with her plans.

PULL UP IN A HURRY!

I remember well hearing, one black night, when with some difficulty we had crept up the sound, our captain hailed gruffly: "Pull up in a hurry there; we're at target practice and you're right in the line of fire!" And I also remember well—but it is too scorching hot for ink—what the captain replied. A very trivial annoyance, but an annoyance, is the landing tax she charges for those not going immediately out of town—two shillings, I think it is—but the forewarned voyager buys a thripenny ticket to Saltash, the nearest station, and uses it or not as he pleases.

The citadel which Charles II built as a hint to a town which had stood staunchly by Cromwell is of little use ex-

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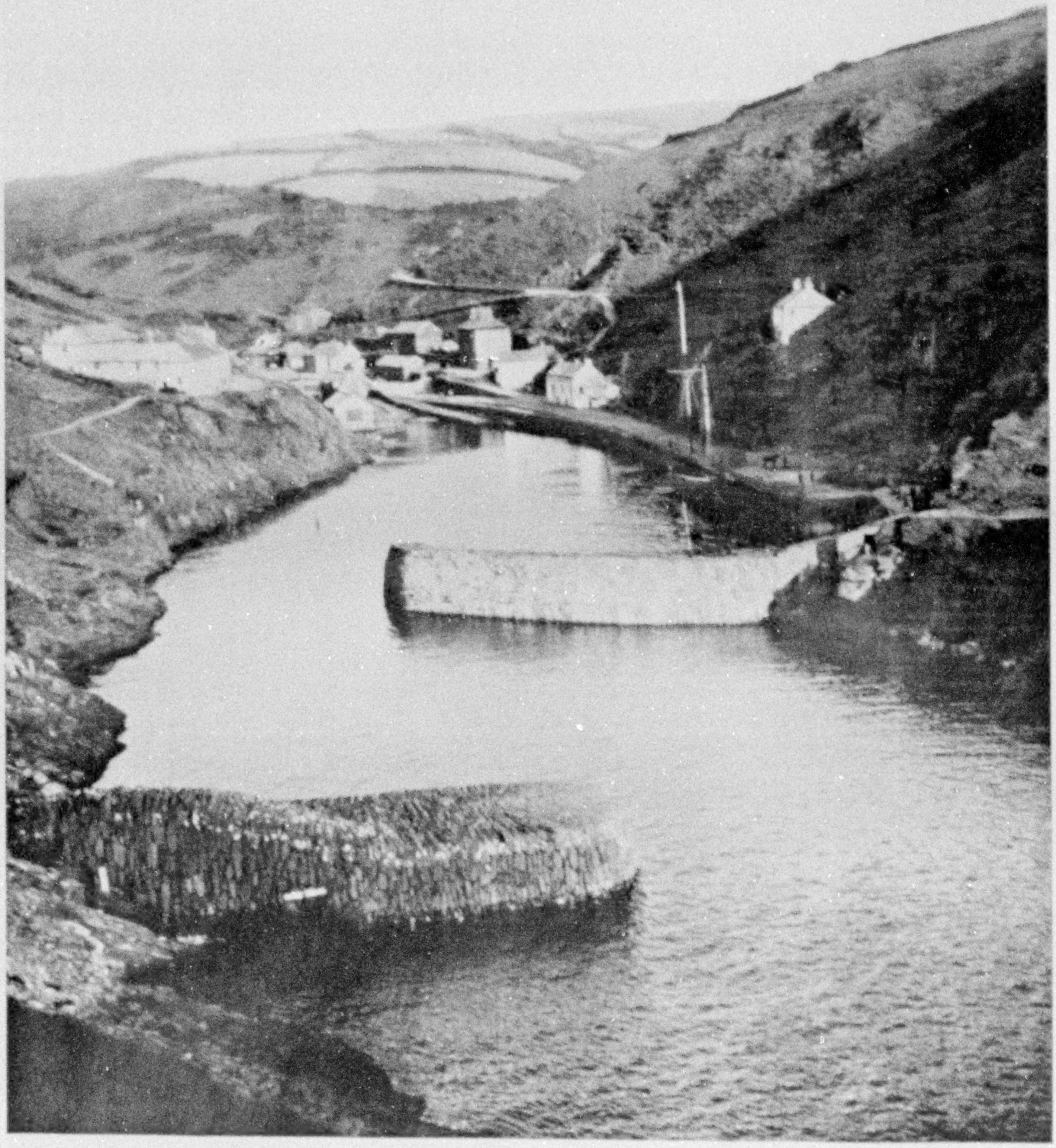

Photo by Emil P. Albrecht

THE TINY HARBOR OF BOSCASTLE, ENGLAND

The village and its harbor, difficult of entrance, but so pretty in its wall of green cliffs, flushing rose-purple with blossoming heather. The name is a corruption of Bottreaux Castle, but of the castle there is no trace. Sir Henry Irving called Boscastle "the prettiest village in England" (see page 18).

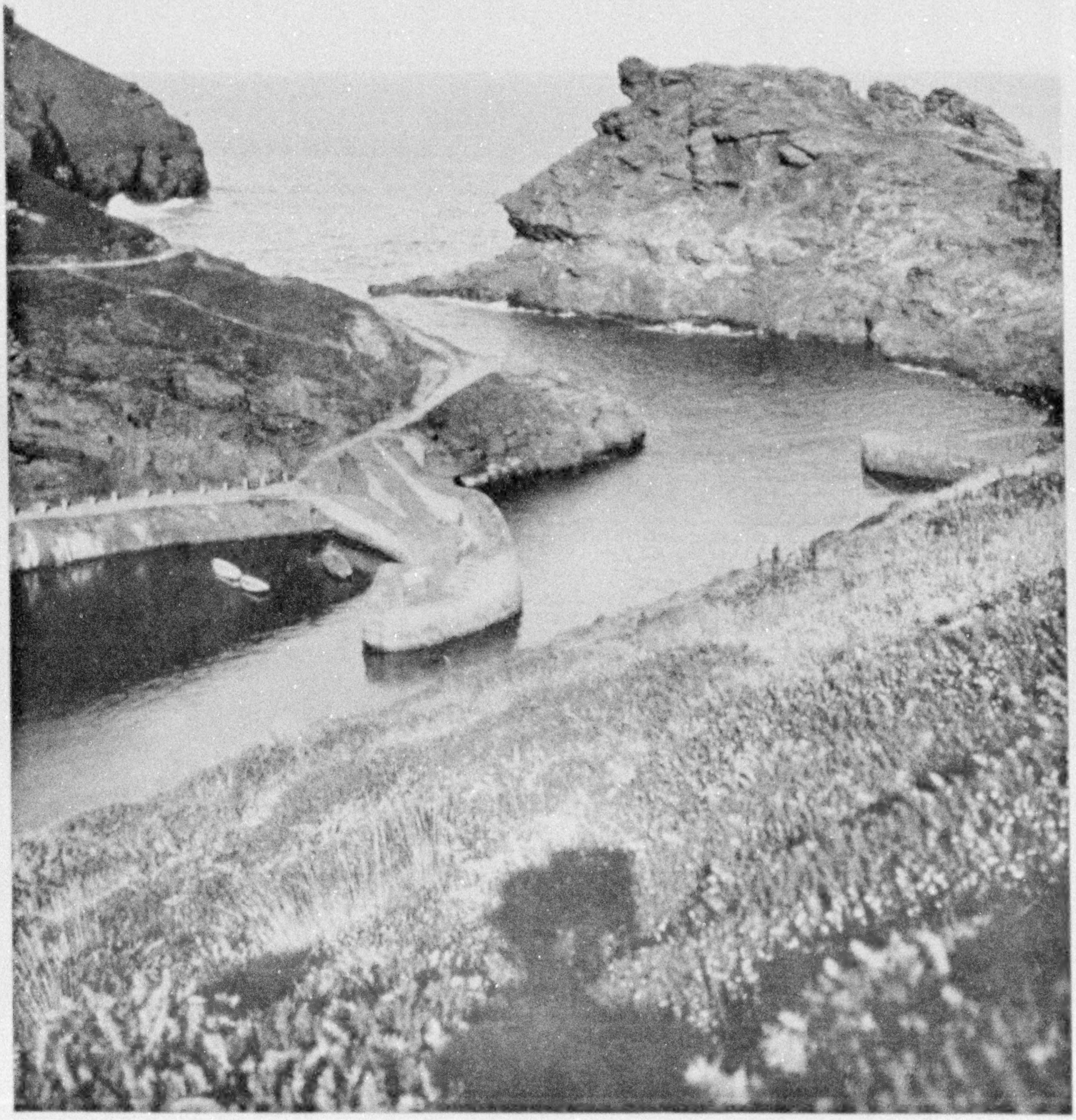

Photo by Emil P. Albrecht

BOSCASTLE: ENGLAND

Even in fine weather boats must be towed or warped into this tortuous harbor. The water is deep and clear, too cool for American bathers, but just right, apparently, for the baby seal that occasionally make it a playground (see page 18).

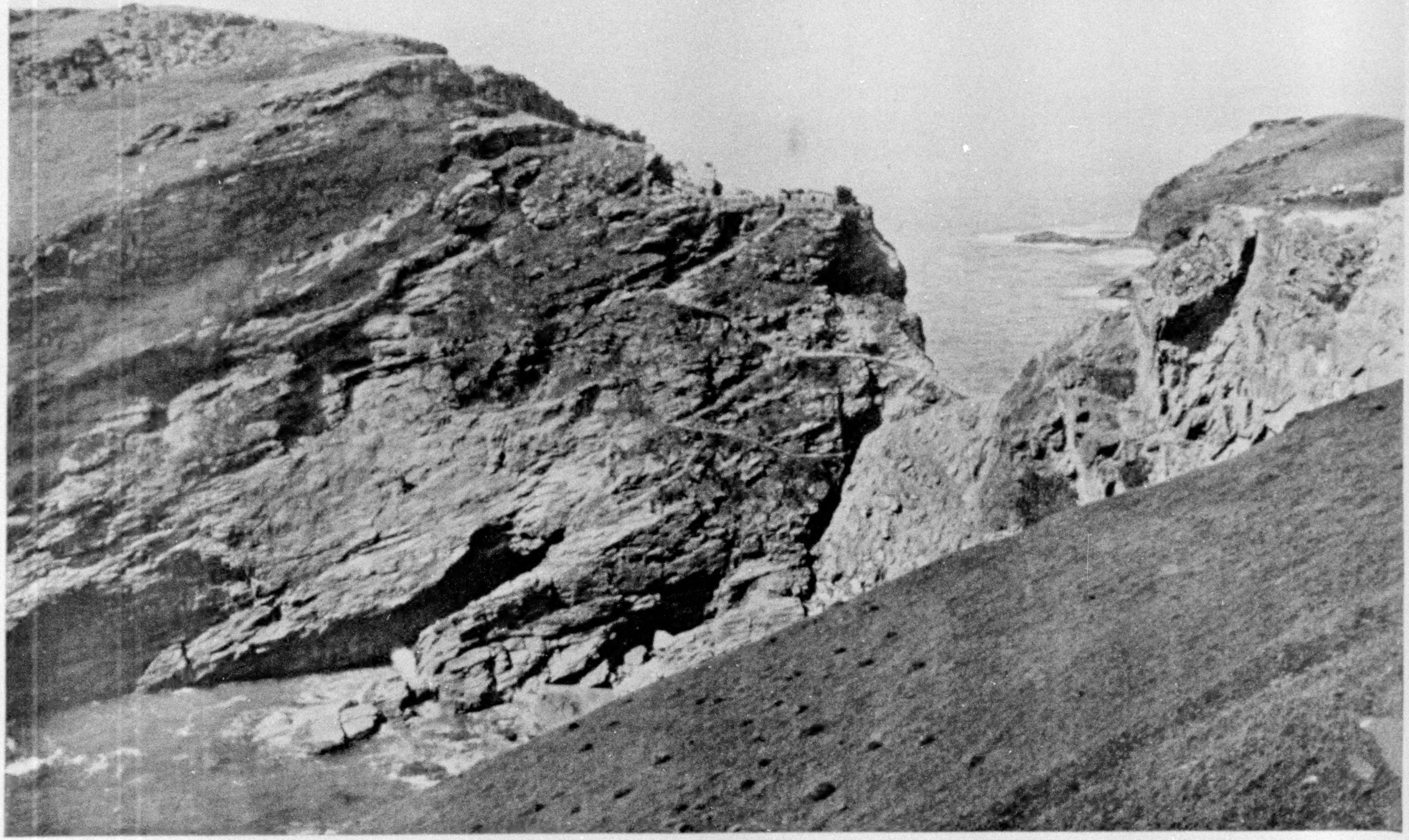

Photo by Emil P. Albrecht

KING ARTHUR'S CASTLE: TINTAGEL, ENGLAND

Upon the great rock, which the sea threatens to make an island, is perched Tintagel. On the right is a small remnant of Terrabil, the twin castle on the mainland. According to the Arthurian legend, Uther Pendragon, King of Britain, falling in love with Ygrayne, wife of Gourlois, Duke of Cornwall, besieged them here in these two castles, slew the duke in one and speedily married his wife in the other (see page 25).

cept as a barracks. Plymouth's defenses are a great ring of forts at her back and the dull-gray fleet in the Hamoaze.

This may consist of only a few old boats, kept as shining examples of what should not be in naval architecture, or it may be a huge fleet, ranging from dreadnoughts to submarines. The boats come and go constantly in summer weather for practice cruises, speed tests, target practice; but occasionally there are maneuvers that bring them all together here, when one dwells with some amusement on the 150 ships which waited here 300 years ago for the ill-fated Armada.

There is a fearfully old Plymouth back of the modern, the Elizabethan port. Trojans and giants wrestled upon the Hoe, prehistoric man dug his rude cave dwellings in the cliff; but it is impossible to consider all this believingly today. The name of Plymouth brings the bang of big guns, the crash of military music, the rush of swift boats, the fluttering of pennants, and the overwhelming natural loveliness of a favored port.

IN A PEA-SOUP FOG

It must be at once stated, lest I hear a doubtful whistle, that Plymouth in a winter sea—worse yet, Plymouth in a channel fog—is neither favored nor favorable. She is not alone in suffering from those "pea-soup" fogs that make navigation in the channel perilous, but it was fearfully exasperating to hear by wireless from Southampton, "Beautiful sunshine," while we fumbled outside of Plymouth in a fog too thick to breathe.

We had seen the fog ahead of us like a curtain as we steamed up the channel; had slipped into it slowly, our bow disappearing before our eyes like a conjurer's trick, and in that wet whiteness, like cool steam, we crept onward for hours. There is always speculation if, in a fog like that, the tender will come to meet the boat; but in our case it did, and no sooner were our passengers and the mail bags on it than we were crawling out again toward Cherbourg. The rest of the story belongs there, but the tender bungled about the sound all night before it landed its wet, tired, sleepy passengers at Mill Bay, which it usually reaches in 20 minutes.

But as Southampton does not always have the sunshine nor Plymouth the fog, there need be no jealousies. The coast is dotted with picturesque but tiny ports; after one has seen Plymouth these seem insignificant. And Southampton, while a great port, is not a rival; for while Plymouth makes no bid for great merchantmen, Southampton invites them, leaving the care of naval vessels to her neighbor, Portsmouth, the chief naval station in England.

Both are protected from the channel's rougher moods by the Isle of Wight, which lays, bluntly diamond-shaped, before them. Spithead, the roadstead between Portsmouth and Ryde, one of the chief ports of the island, is left largely to the naval fleet, while the merchantmen come and go through the Solent to Southampton.

WHERE THE TIDES MEET

It is at the mouth of the Solent that one passes the famous Needles, three white, jagged chalk rocks off the western end of the isle—picturesque enough in summer weather, but dangerous in storm. The tides sweep in upon both sides of the Isle of Wight, that from the North Sea, that from the ocean, and prolong high water for two hours (see page 47).

To this as well as to its sheltered position Southampton owes its importance. The town lays upon a point between two rivers, the Itchen and the Test, the whole lower end of this point being devoted to wharves, docks, and basins accommodating the largest vessels. More than 3,000 vessels enter the port yearly, many of them huge ocean liners, but since the beginning of the war Southampton has been entirely closed to shipping. Its present defenselessness may be in part responsible, for while once a fortified place, the remnants of its walls and gates are now preserved merely for their picturesque or historic values; but its proximity to Portsmouth is the stronger reason.

Portsmouth is strongly fortified and is an important garrison town as well as

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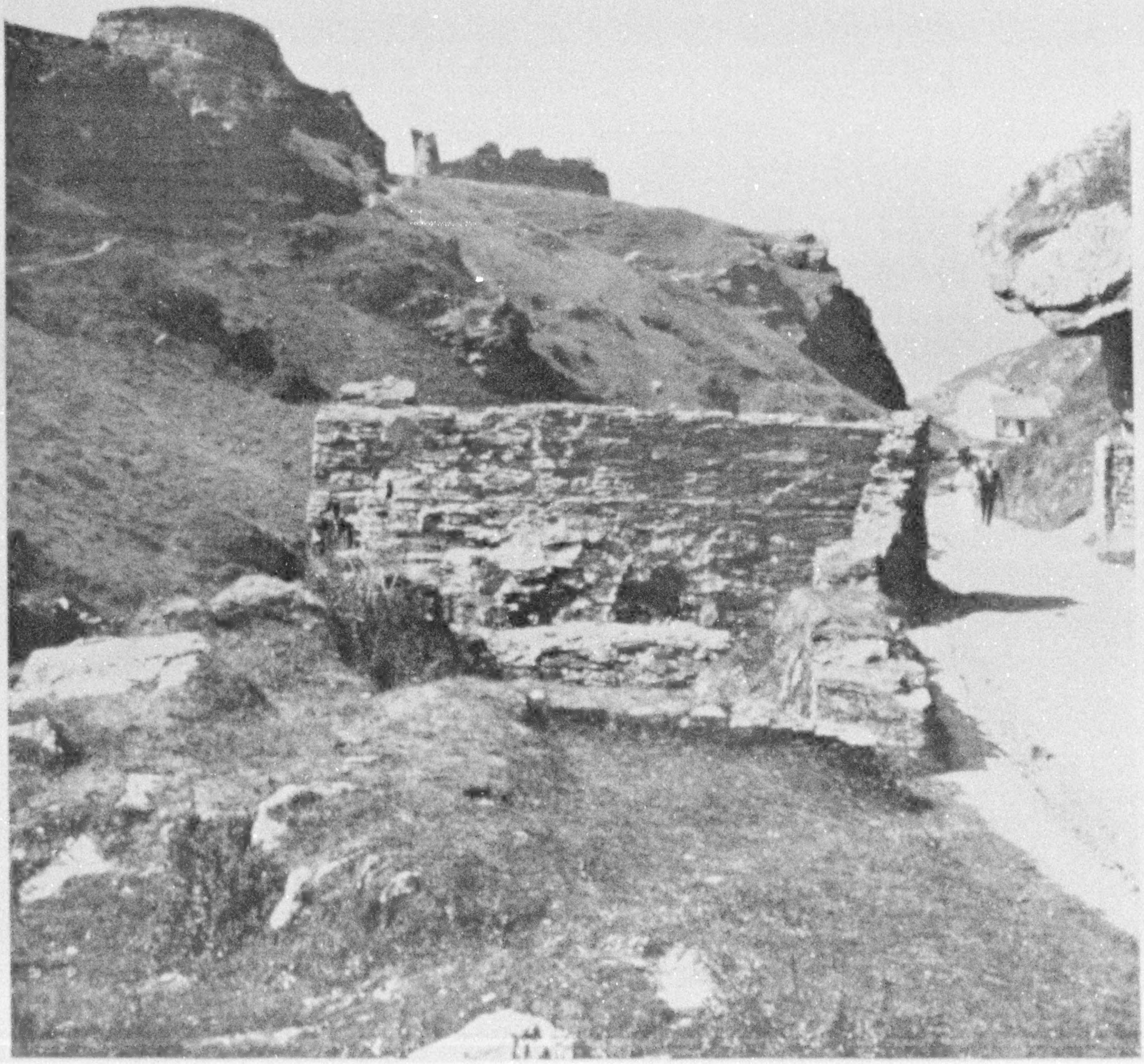


Photo by Emil P. Albrecht

THE ROAD TO THE CLIFFS AND SEA: TINTAGEL

On the cliff to the left are the ruins of the "Castle of King Arthur," where Arthur's knights sat at the round table. "Seeing his end was near, Arthur bade his last faithful knight to carry him to Bozmare Pool and throw in there his sword. Three queens appeared and bore him away from his sorrows. Some say he still lives in fairyland and eventually will reappear to reinstate his Order of Knights of the Round Table" (see page 25).

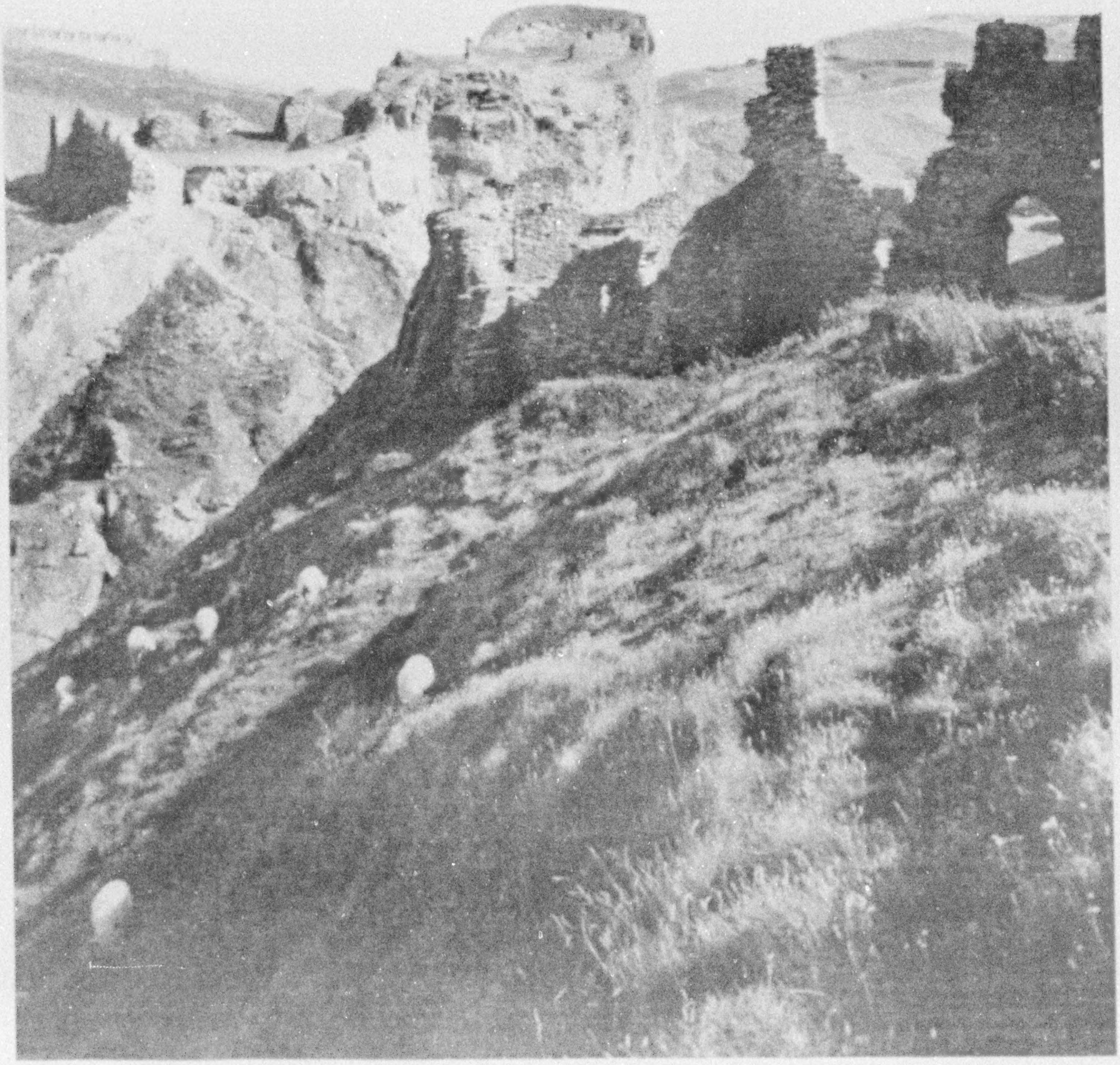


Photo by Emil P. Albrecht

THE RUINS OF KING ARTHUR'S CASTLE: TINTAGEL, ENGLAND

Of the earliest castle there remains little trace. Briton and Saxon had their strongholds here, but the few ruined battlements left today are probably no earlier than Norman times. Scores of sheep pasture fearlessly on the slippery slopes which plunge so swiftly to the sea. The whole "island" seems once to have been within the fortified area that was Arthur's stronghold. There are remains of a small chapel, a well, and a so-called hermit's cave on the plateau which forms the high ground of the "island."

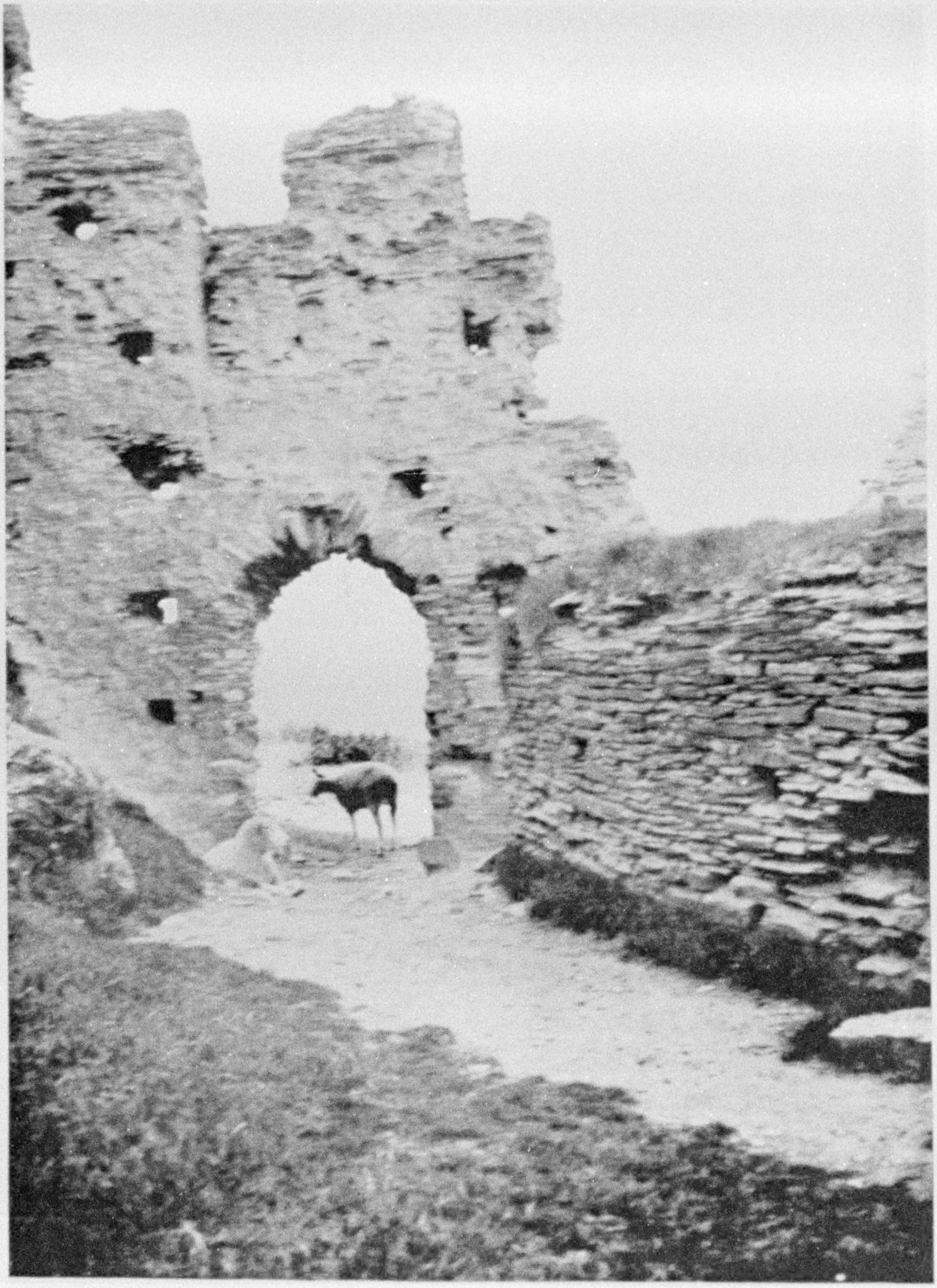


Photo by Emil P. Albrecht

IN THE "GREAT HALL" OF TINTAGEL CASTLE: TINTAGEL, ENGLAND

The hall is open to the sky, the sun and stars look down in turn upon its turf-clad floor, the grasses grow where once Ygrayne watched the siege of Castle Terrabil and her husband's defeat, where she married, that same day, his conqueror. It was of this marriage that that Arthur was born who organized the Knights of the Round Table and sent them on their mission of punishing vice and rescuing oppressed virtue, for the love of God and of some noble lady.

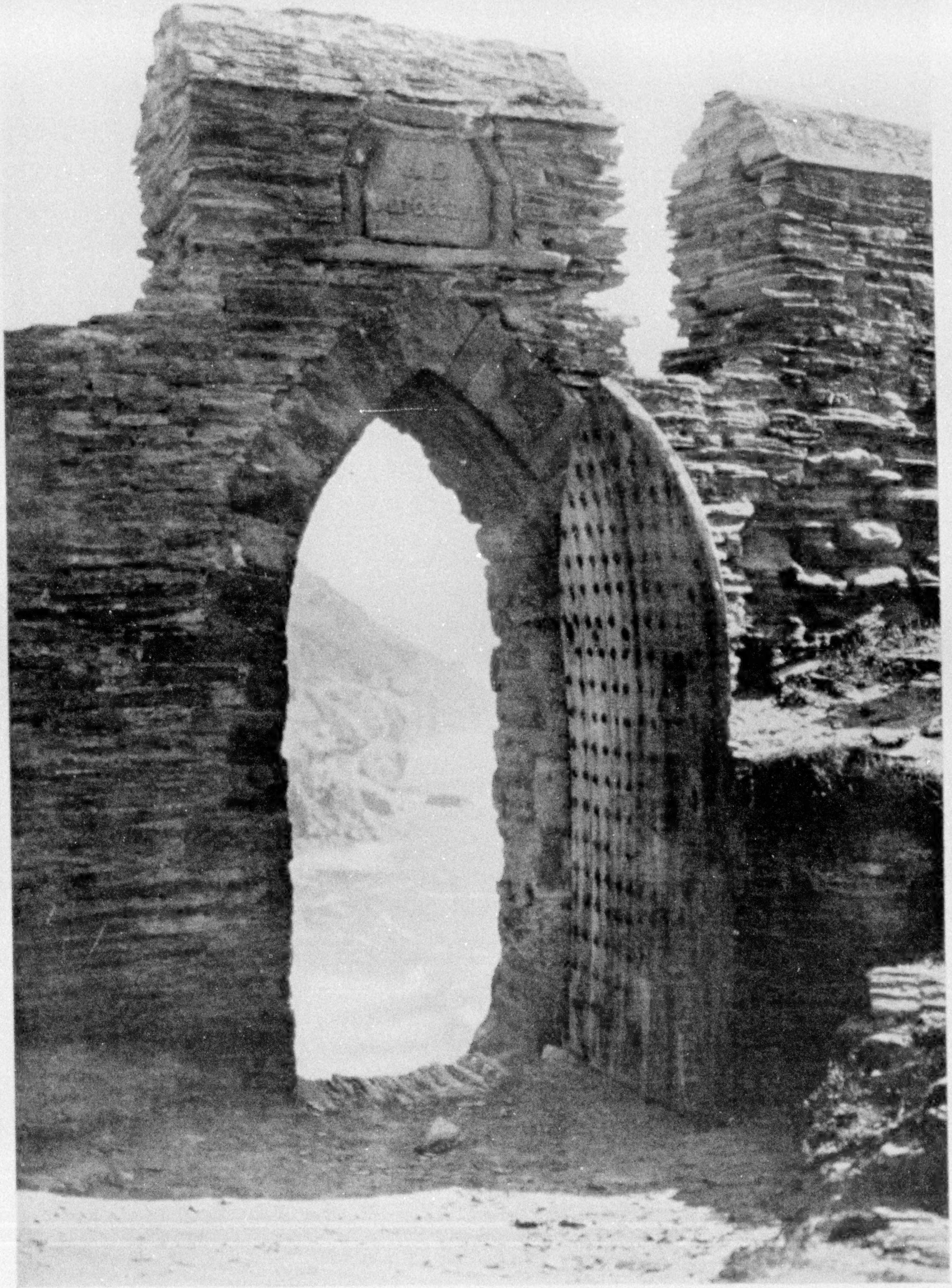
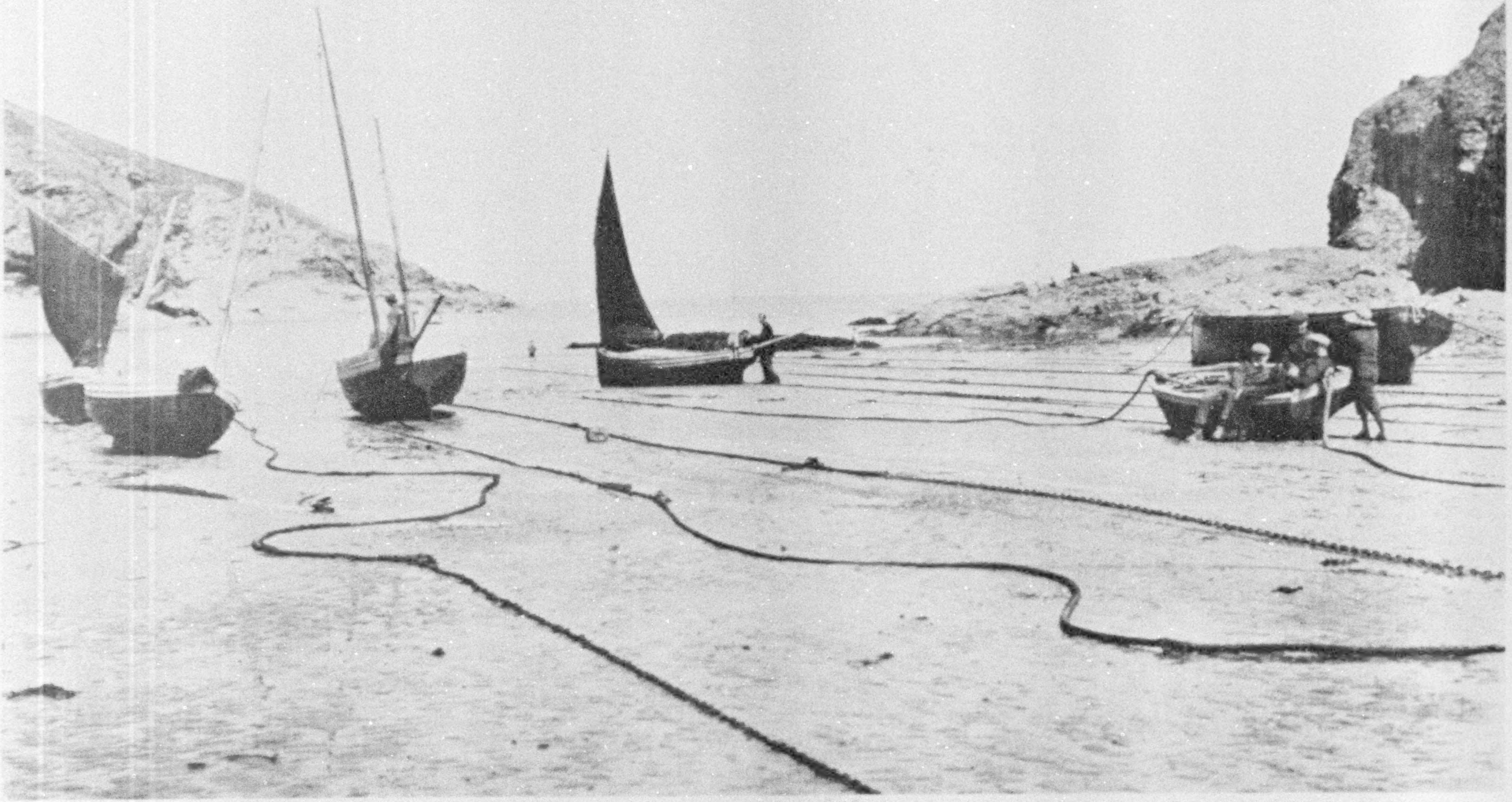


Photo by Emil P. Albrecht

THE DOOR OF THE KEEP: TINTAGEL CASTLE, TINTAGEL, ENGLAND

Narrow, steep steps lead from it down the cliff. It is the only exit or entrance. From it one has a glorious picture of swirling, pounding water, the Atlantic's strongest swell; of rock, black and foam-wrapped, and green cliff basking in the sun.

XUM



PORT ISAAC: THE HARBOR AT LOW TIDE (SEE PAGE 25)

The great chains, lying like snakes black on the wet, shingly sands, are used to anchor the fishing boats. The port is but a cleft in the rocks exposed to the western winds and in winter a precarious shelter. In summer it is marvelously picturesque. "If one hears a hoarse voice calling that Sallie or Lizzie or Margret ''ave broke 'er leg!' one need not wish for an ambulance. Every boat is provided with crutches or 'legs' to hold it level when the sea leaves it on the sand. When a leg breaks the vessel keels over on the ooze, messing things up inside, and all hands must turn out to right her and mend the broken crutch" (see text, page 37).

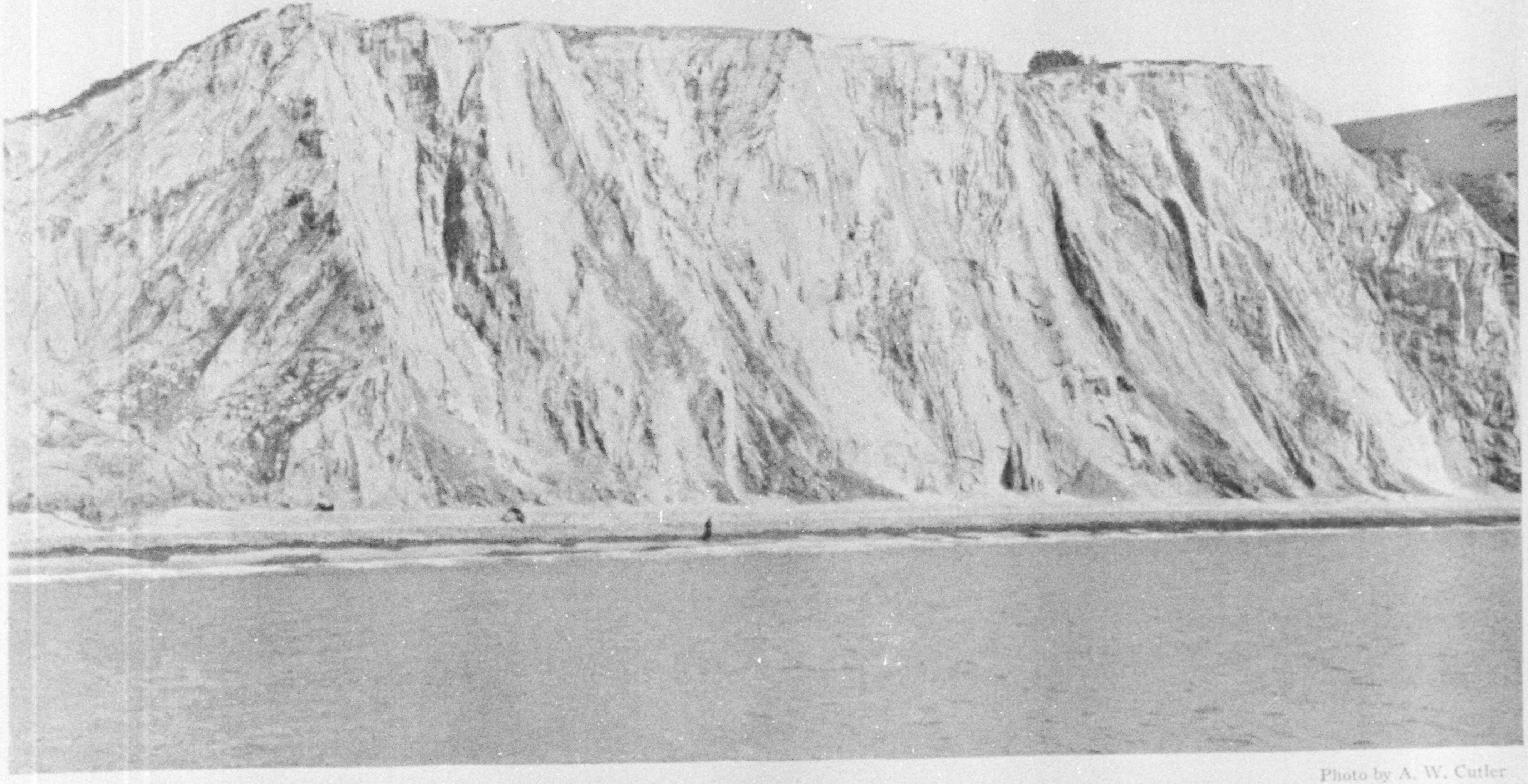


Photo by A. W. Cutler

THE MANY-COLORED CHALK CLIFFS WHICH MARK THE COAST-LINE ON THE ISLE OF WIGHT NEAR "THE NEEDLES"

These chalk cliffs are always of great interest to passengers on ocean liners plying between Southampton and New York. This is how the cliffs appear from the deck of a small pleasure steamer on Alum Bay—so called because alum years ago used to be made from this chalk. The height of these cliffs is indicated by the human figure on the beach. These chalk cliffs were formed by the deposit of tiny marine animals under water, much like coral. Upheavals finally brought them up out of the water.

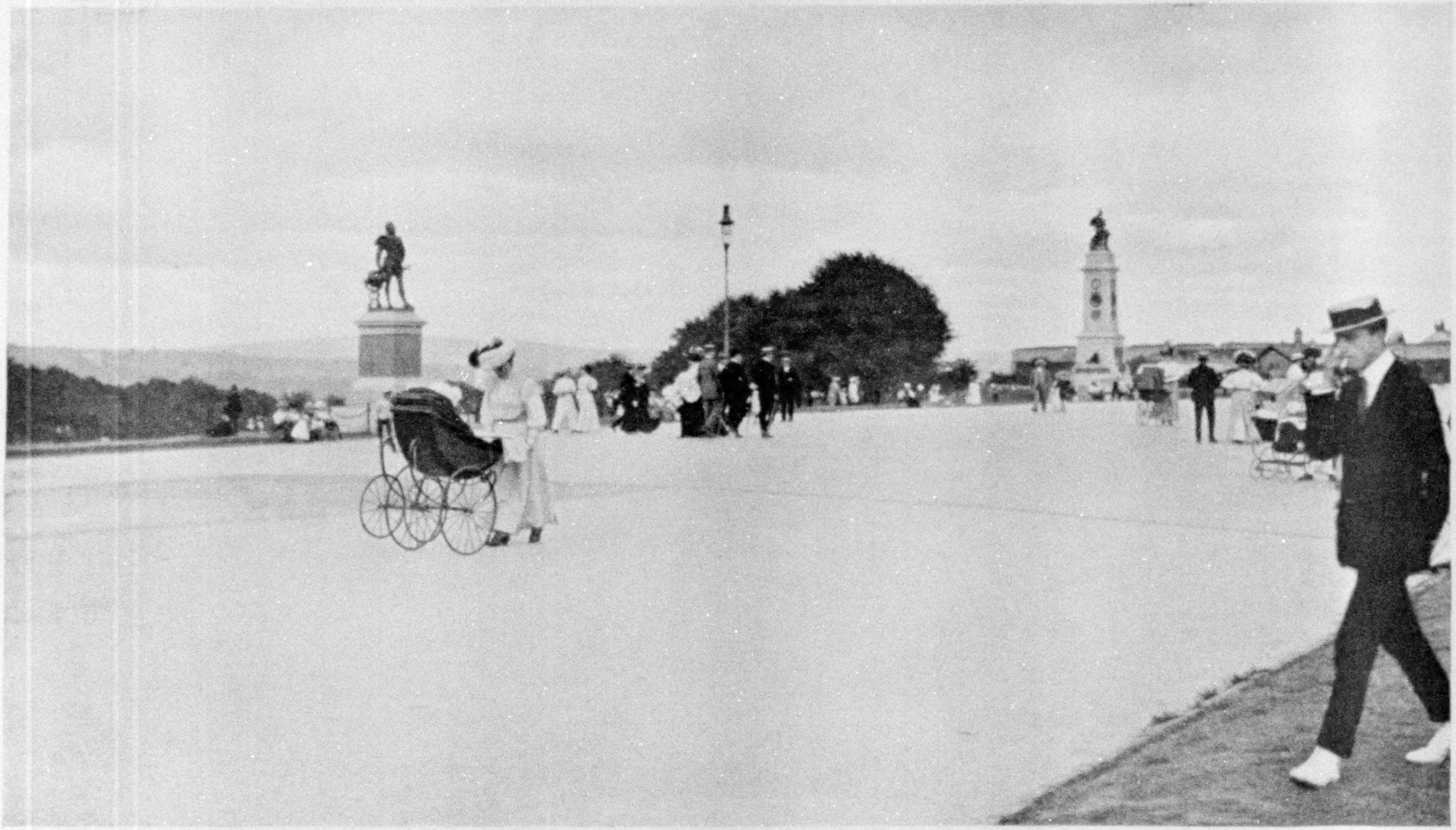


Photo by Emil P. Albrecht

THE HOE, A FINE PROMENADE OVERLOOKING THE SOUND: PLYMOUTH, ENGLAND

The statue on the left is of Sir Francis Drake. Sir Francis Drake was playing bowls here on the Hoe when the Spanish Armada was sighted, but would finish his game before he went to meet it. In the distance lies Dartmoor, which has been described as a "high-lying moorland—a monstrous lump of granite covered with a sponge of peaty soil." It contains many menhirs, stone circles, and other relics of the ancient Britons (see page 37).

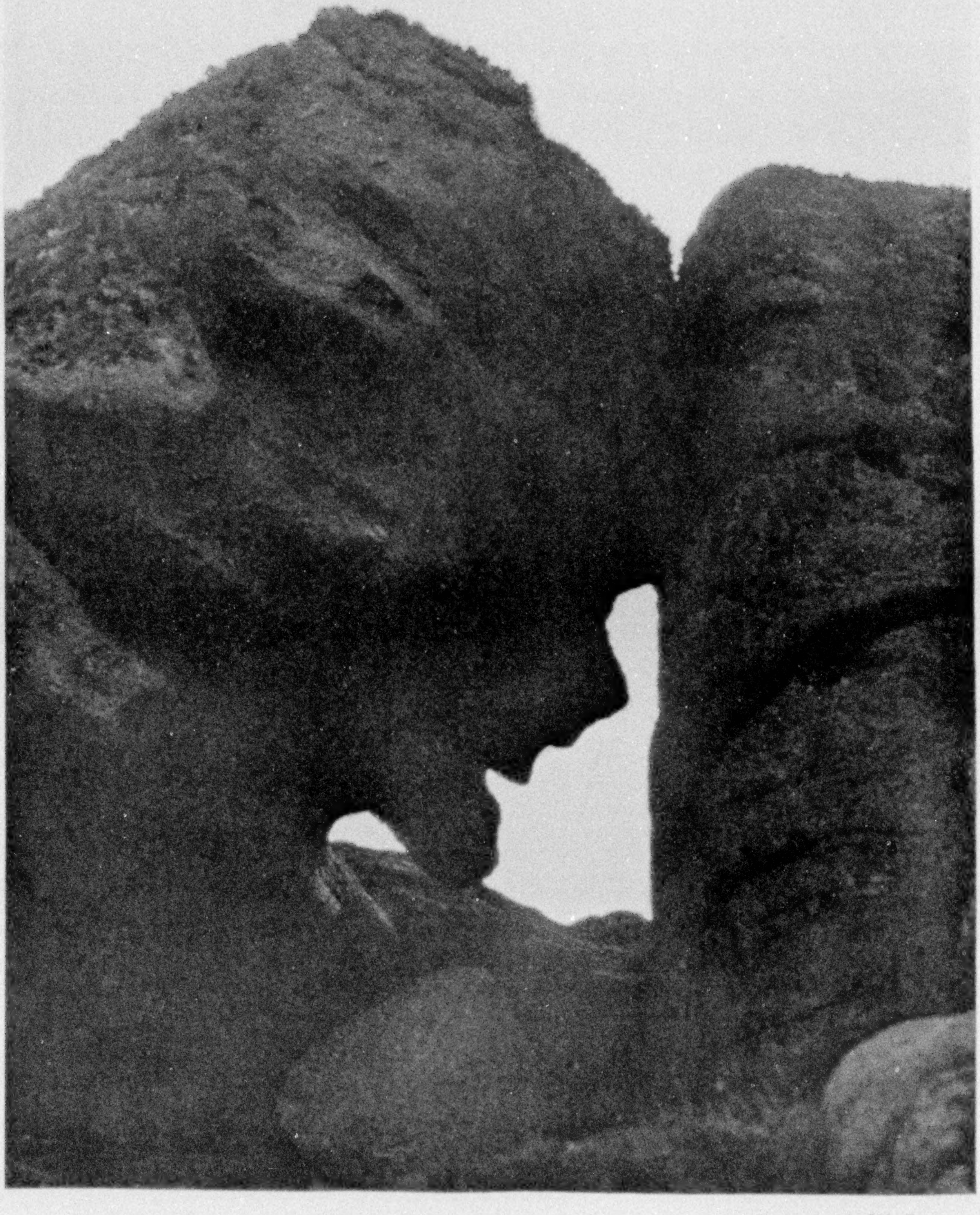


Photo by A. W. Cutler

"OLD DR. SYNTAX": A REMARKABLE NATURAL CURIOSITY AT LANDS END

The 10-mile drive between Penzance and Lands End is rich in history and archæology. One passes Carn Bran, where Wesley is supposed to have preached to vast crowds of miners; Boscawen, with its stone circle handed down by the ancients, and "first and last hotel in England," although it is no longer that. "Old Doctor Syntax" shares his honors with "Armed Knight" and "Irish Lady," who are also graven in stone by Nature's hand.

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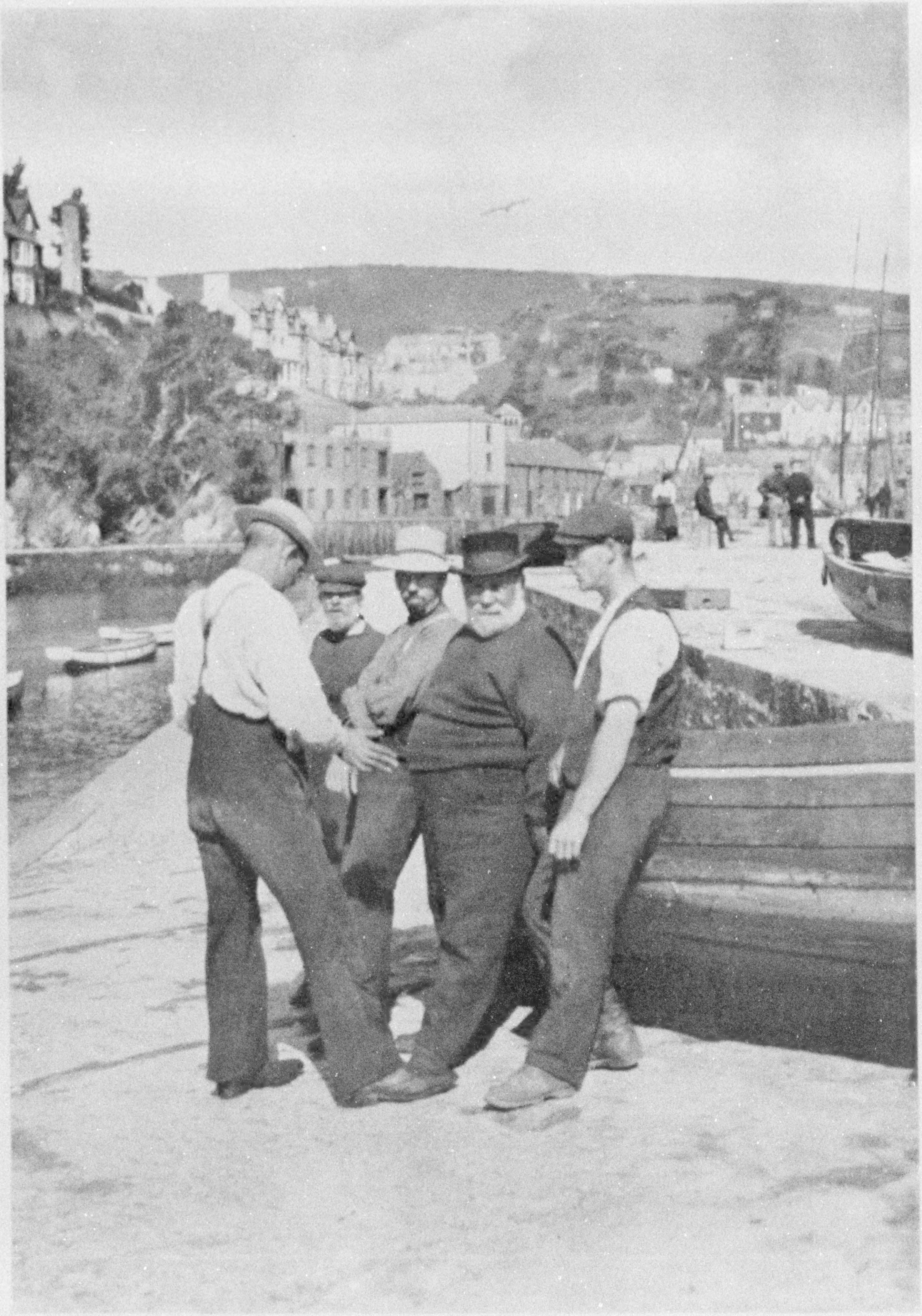

Photo by Emil P. Albrecht

EAST LOOE; ENGLAND

One hears many stories in Looe—stories of pirates, of war, of smuggling, of mermaids and pixies—but it is needless to say the best of all stories told in a village by the sea must be of fish. It would be pleasant to know if this one is still growing. While the men tell the stories, the women knit dark-blue jerseys; no sooner is one finished than another is begun. Looe also boasts of golf links, where the well-to-do come to play, and one knows not which are the longer, the fish caught in Looe's waters or the drives made on Looe's links, for both fisherman and golfer sometimes measure with the same elastic yardstick.

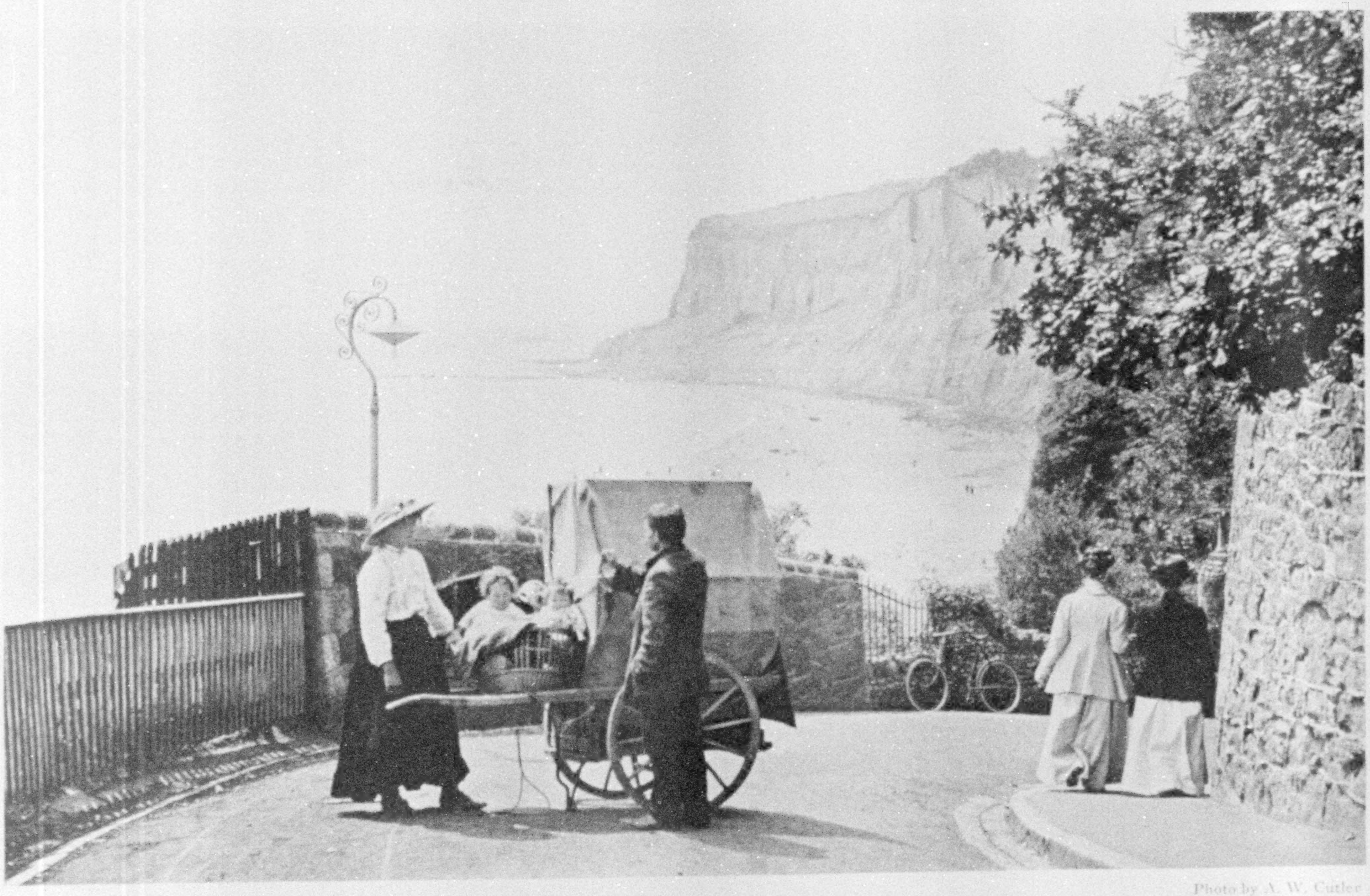

Photo by A. W. Cutler

INTO THE QUAINT CORNERS OF THE WORLD MUSIC FINDS ITS WAY

How visitors to Shanklin, Isle of Wight, are entertained each morning in the summer. In the background is Cape Dunnose

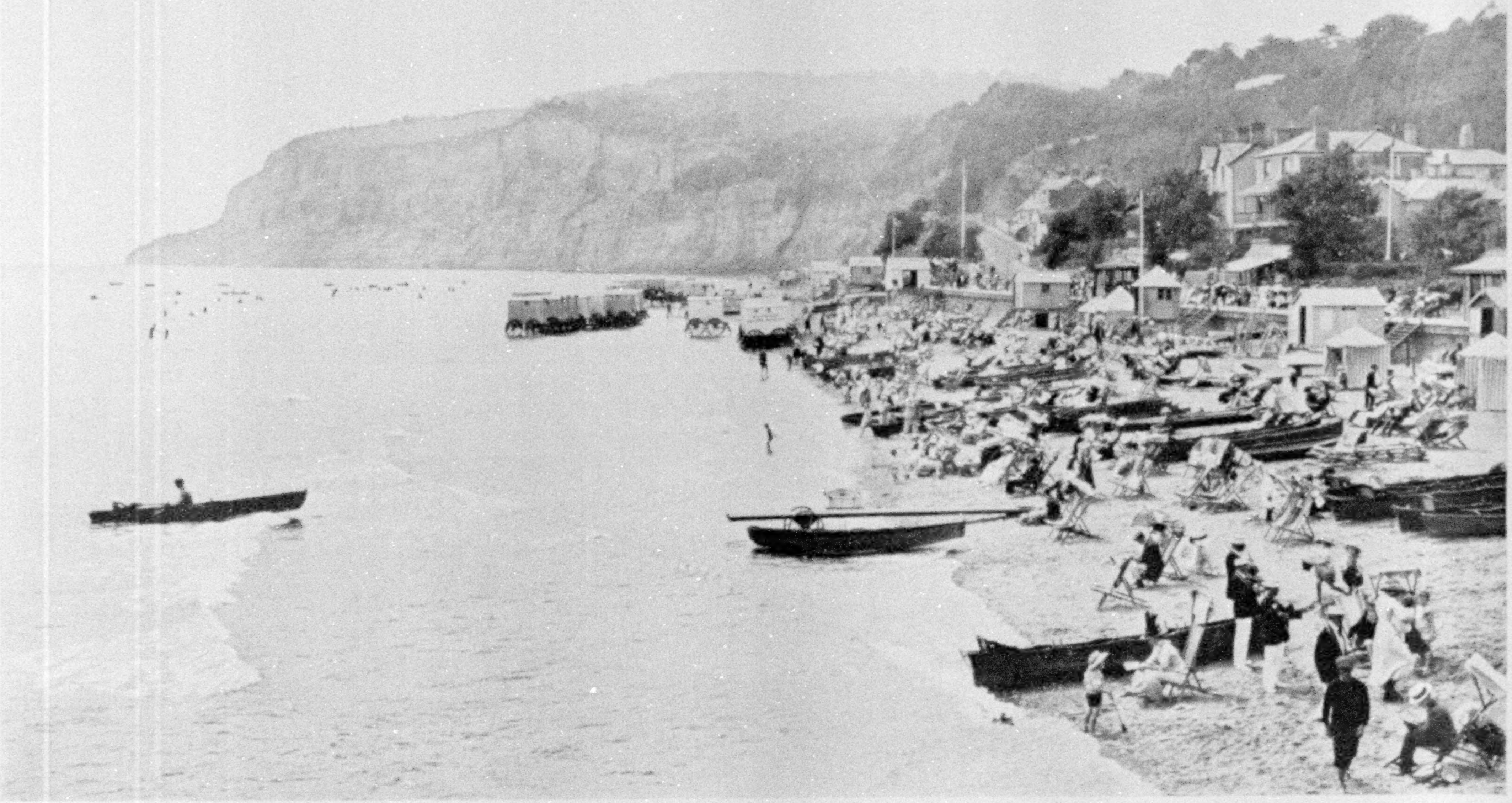

Photo by A. W. Cutler

A SCENE ON THE BEACH AT SHANKLIN: ISLE OF WIGHT

The most popular seaside resort on the island. Cape Dunnose in the background. Not far from Shanklin is the famous park of Appuldurcombe, once the estate of Sir Robert Worsley, and now the home of French Benedictine monks

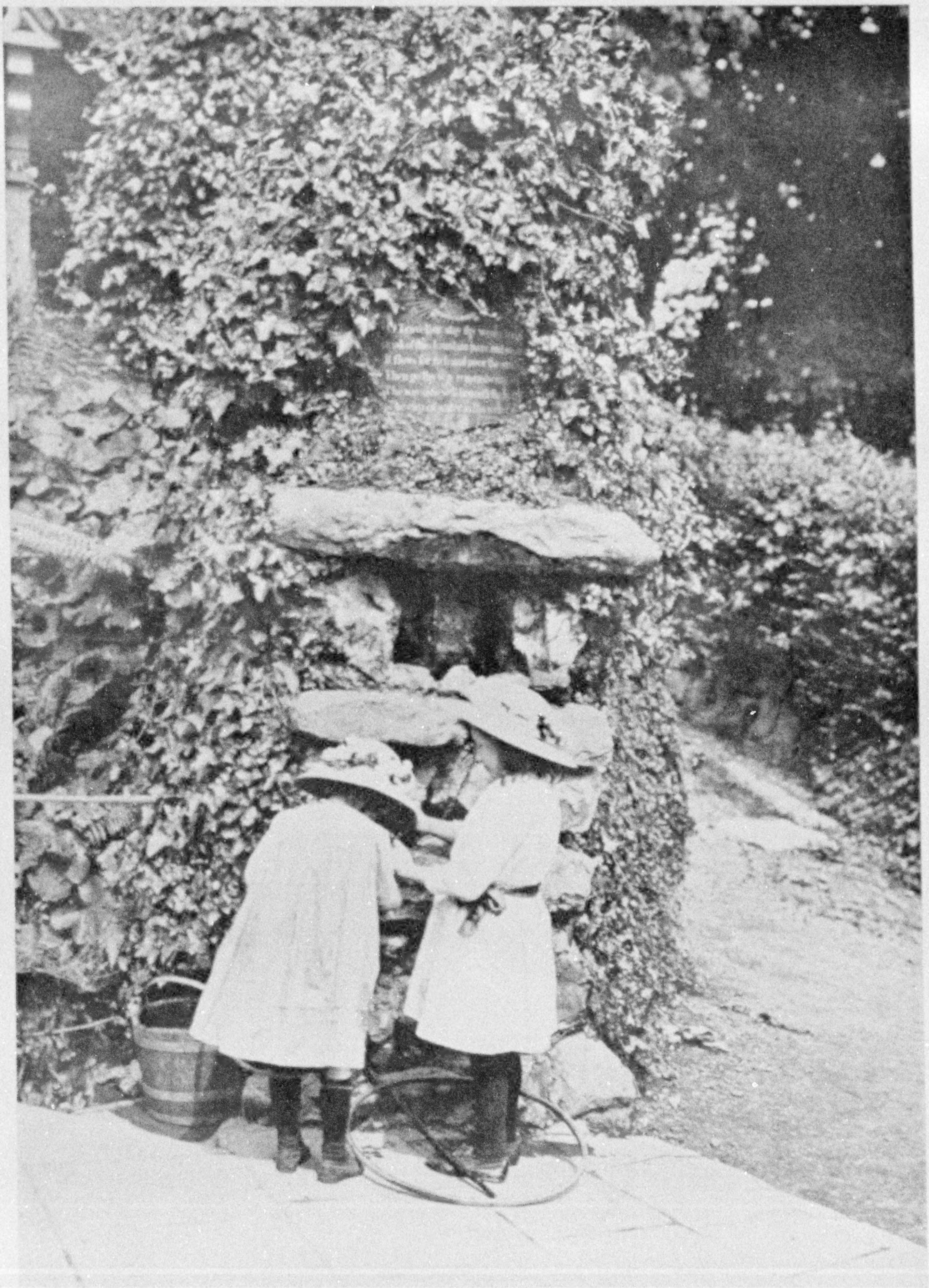

Photo by A. W. Cutler

THE OLD FOUNTAIN AT THE VILLAGE OF SHANKLIN: ISLE OF WIGHT

Made famous by Longfellow, whose poems seen above refer to this fountain. Longfellow once lived in this village. Although only 65 miles in circumference, Isle of Wight, the Vectis of the Romans, is rich in history and abounds in beautiful scenery; almost half of its shore-line is occupied by villages, large and small.

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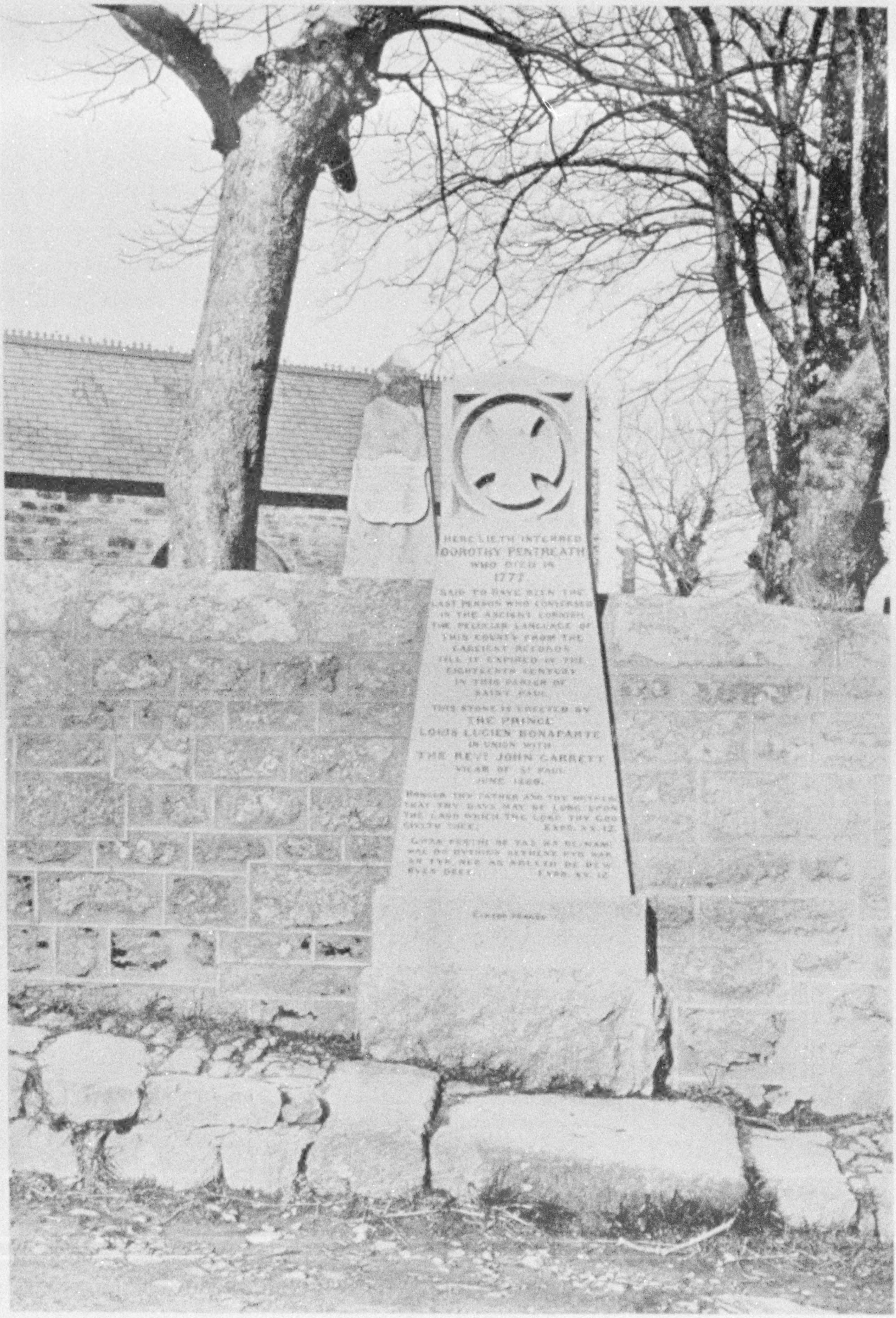
HERE LIETH INTERRED
DOROTHY PENTREATH
WHO DIED IN
1777
SAID TO HAVE BEEN THE
LAST PERSON WHO CONVERSED
IN THE ANCIENT CORNISH
THE PECULIAR LANGUAGE OF
THIS COUNTY FROM THE
EARLIEST RECORDS
TILL IT EXPIRED IN THE
EIGHTEENTH CENTURY
IN THIS PARISH OF
SAINT PAUL
THIS STONE IS ERECTED BY
THE PRINCE
LOUIS LUCIEN BONAPARTE
IN UNION WITH
THE REVD JOHN GARRETT
VICAR OF ST PAUL
JUNE 1860.
HONOUR THY FATHER AND THY MOTHER
THAT THY DAYS MAY BE LONG UPON
THE LAND WHICH THE LORD THY GOD
GIVETH THEE. EXOD. XX. 12.
EXOD. XX. 12

Photo by A. W. Cutler

A MEMORIAL TO THE LAST SURVIVOR OF THE CORNISH-SPEAKING RACE

Eighty-seven years after Dorothy Pentreath died, and with her the Cornish language from living tongue, this monument was erected to her memory by Prince Bonaparte and Vicar Garrett of St. Paul.

Photo by Emil P. Albrecht

THE NEEDLES: SOUTHAMPTON

These are jagged chalk rocks resting upon bases of darker stone rising 100 feet from the sea, a warning and a menace to mariners bound for Southampton. The cliffs form the westernmost point of the Isle of Wight. Cowes, with the best harbor on the island, is at its northernmost point, opposite Southampton and but two miles from the mainland. Ryde, farther to the east, is almost directly opposite Portsmouth, the great naval station. The island is about 65 miles in circumference and rises nearly 800 feet above the sea.

chief naval base. It is made up of four towns — Portsea, Southsea, Landport, and Portsmouth — smallest, but name-giver, and has a magnificent harbor nearly five miles long, reaching into Spithead.

PORTSMOUTH'S DOCKYARDS

The dockyard covers 300 acres, the repairing basins 60 acres, and there are drydocks and building slips capable of holding the largest superdreadnought. Southampton docks are probably in use also at present for naval purposes. Spithead and the Solent are mined; there are no crowds on the cliffs above Ryde, no yacht squadron fluttering its white sails in and out of Cowes.

In these days, when history is in the making, it seems futile to recall the past; yet one old memory will be heard even today. It was on Southampton shores that Canute rebuked the courtiers who proclaimed his command of the sea. Probably those double tides were puzzling to the Danes.

Ah, they were stirring days! Yet not more so than now. Go on round the coast, if you will, from port to port, coming finally to where Dover faces France. Ask the castle on the white cliff there what it has seen—Roman, Saxon, Dane, and Norman; how the invaders come; how, too, the white fleets go out to meet them. And now again there is war in the channel and the rocks and forts keep guard.

"Keep then the sea that is the wall of England." The cry is four centuries old; but bravely the ports, little and big, have kept the word and today would keep it still.

Photo by H. C. Tibbitts

ENTERING GOLDEN GATE

The entrance to San Francisco from the Pacific Ocean to the magnificent San Francisco Bay, about five miles in length, is through the Golden Gate, so called by the immortal Fremont, and it is a name known to seamen the world over. With its strikingly picturesque setting and splendid harbor, small wonder that San Francisco is the chief seaport of the Pacific coast and the gateway to the Orient. Its latitude is that of Lisbon and its climate like that of southern Italy

THE WONDERLAND OF CALIFORNIA

BY HERMAN WHITAKER

AUTHOR OF "THE PLANTER," "THE SETTLER," "CROSS-TRAILS," ETC.

FROM her earliest beginnings California was steeped in romance. Within her borders the early discoverers placed "El Dorado," the fabulous land whose shining streams rippled over boulders of solid gold, and history aided their pleasant conspiracy. For two centuries the silver-laden Spanish galleons laid their courses from the Philippines to Cape Mendocino, then skirted a thousand miles along the Californias on their way south to Panama—a fact well known to Sir Francis Drake, the gallant pirate, who laid up his vessel, the *Golden Hind*, to wait for them in a little harbor northward of San Francisco Bay.

Later came the brown-robed padres and Dons in buff and scarlet to color the land with their picturesque life and invest it with dreamy, religious idealism. If more practical, the "gold rush" of '49 was nevertheless merely the successful sequel of the search for "El Dorado," and established forever that fabled land within California's borders.

Surely, in view of all this, a heavy discount of her pretensions would seem inevitable; yet out of the full knowledge gained by 20 years' roaming within her borders I do not hesitate to assert that California is the customary exception to every rule—gains instead of depreciates on closer acquaintance.

First impressions are always vital, and one of California's principal assets inheres in the fact that, whether you come from the north, south, east, or west, she is not to be caught like a slovenly beauty, in negligée, with her stockings down at the heel.

THE LAND OF LITTLE RAIN

It would be better, of course, if you could come in by trail, as in the old days, with a white-tilted prairie schooner that pitched up and down or wallowed in the sandy trough of blue ranges that run like breaking waves across the desert from Old Mexico to the Canada line. A closer intimacy would be established between you and the country. But, seen through a car window, the desert, with its lonely mesas, monolithic masses that loom in violet distances, is beautiful beyond description—unless it be that of Mary Austin in "The Land of Little Rain."

This is the heart of it, that magic land swathed in golden sands and girded with crimson and chrome mountains that sometimes wear around their brows a cooling band of snow. From the shimmering horizon the shining wastes of the Mojave run northward across Death Valley between the high Sierras and certain broken ranges almost to the Yosemite.

It is a country useless from man's point of view, and the bones of many an adventurer testify to the fact; yet it yields a living to its own little animals and plants that burrow or sink their roots down to the water under its kiln-baked sands. Over the whitening bones snakes and lizards, horned toads, the Gila monster, coney and jack-rabbit frisk or crawl in unconscious cynicism.

They are scorned by the soaring vulture; likewise the lone coyote that stands on a sand hummock and blinks at your train. Over the shining surfaces, that reflect like huge mirrors the intolerable glare of the sun, broods a breathless calm. But this is broken, on occasion, by wind-puffs that lift the alkali in sudden whorls. Always they are to be seen, these little winds, dancing over the hot face of the desert

A REGION OF YUCCA AND CACTI

Southward the desert runs to yucca, grotesque shapes that march with the train for leagues upon leagues, flinging their shrunken arms like posturing dwarfs. Elsewhere cactus chaparral clothes the nakedness of the land, and, in its season, this blossoms into sudden beauty. The yellow blooms of the *huisiche*, vermilion tips of the *okatilla*, magenta buds of the *nopal*, and "crucifixion

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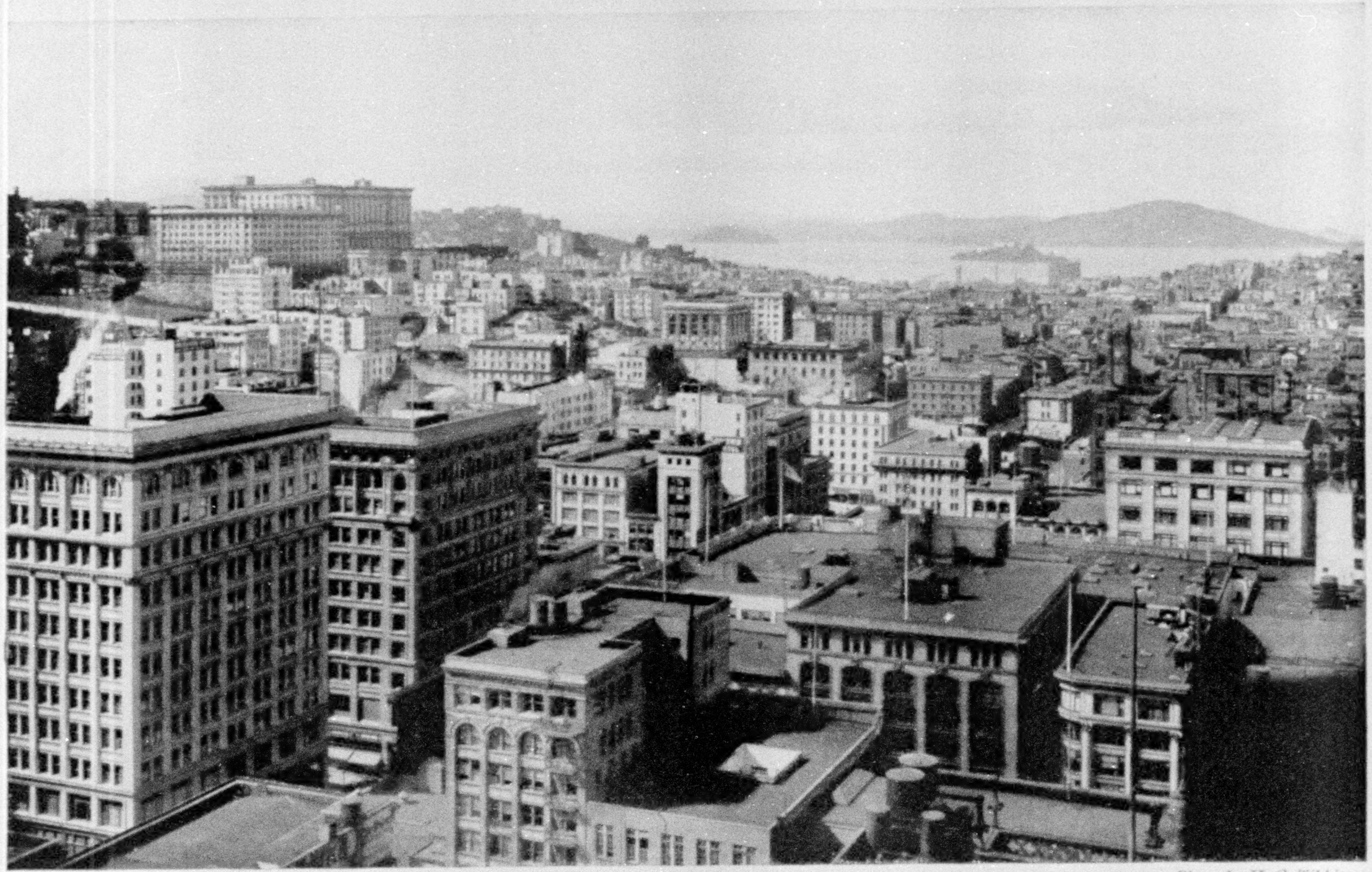


Photo by H. C. Tibbitts

A VIEW OF SAN FRANCISCO AND THE HILLS ACROSS THE BAY

San Francisco stands today a city that every American may well be proud of and a monument to the courage, energy, and boundless determination of its citizens. Nine short years ago, it will be remembered, the city was devastated by a fire scarcely equaled in our history. Thousands were rendered homeless and financially ruined; indeed, the nerve center of the Pacific coast business world was all but wiped out at a stroke. Yet within that short span of years the city has not only been rebuilt from its ashes—a great and glorious city of sky-scraping business blocks and palatial homes—but these same people have given to the world as a crowning achievement the Exposition of Expositions.

thorn" splash the dull green of the sagebrush with color.

But during the dry season—and that is most of the year—the sage runs, an ashen sea, to saw-toothed ranges that scratch the distant sky. If repellant at first, all of these different faces grow on acquaintance, become beautiful at last, as the smile of an old friend. Those who know the desert in its intimate moods do not altogether favor the dry farming and irrigation projects that threaten its infinite spread.

Though the desert appears dead-flat to the eye, it really runs in a series of levels, and as your train climbs from one to another, the engine gasps like a heart-broken runner and pauses often to drink at small, ramshackle towns, any one of which might have furnished the model for "Wolfville." Each fences a few rods of track from the yellow expanse, with a double row of sun-bleached shacks. Each has its Chinese restaurant and trading store, with bright Navajo rugs spread out on the veranda.

STREET LIFE

Always the street begins, ends, and is absurdly full in the middle with saloons, on the verandas of which lounge a mixed crowd of cowmen, Indians, and Mexican peons. At first sight they appear hopelessly squalid; but, like the desert, they grow on acquaintance. When viewed with the eye of knowledge, they blossom with sunset colors.

The train slides on over the edge of the desert and drops down into the subtropical luxuriance of southern California with a suddenness that is almost disconcerting. Through a succession of vineyards and orchards, in whose glossy depths citrus fruits glow and burn, the train runs in a couple of hours into the bright, clean city of Los Angeles.

AN HISTORIC MISSION

It now behooves one to step reverently, for this is holy ground. The Missions of San Antonio de Padua, San Luis Rey, and San Diego lie close to that city, in which the San Diego Exposition, a lovely section of Moorish Spain, is just as much at home as in its native country.

Just outside of Los Angeles stands, too, the famous old Mission of San Gabriel. Erected in 1771, it possessed in its prime four "Asestencias," one of which, the Church of Nuestra Señora la Reina de Los Angeles, was built when the proud and ambitious city was still a small Mexican hamlet, with a total population of 1,000 souls. Of the 22 missions erected by the padres, San Gabriel is perhaps the best known.

BELLS OF SAN GABRIEL

In addition to the historical associations that cluster thick around its venerable walls, it has been a favorite subject of poem and story. Stevenson wrote about it, and Charles Warren Stoddard's poem, "The Bells of San Gabriel," rings out like their rich chimes, carrying one back to the pastoral age, when the wandering tribes flocked from the woods and valleys to the mission's folds.

There could be no pleasanter trip than to follow the footsteps of the padres up the coast. You will have to go ahorse, for the way, a narrow mule path, is sometimes washed by the Pacific surf, and again it leads into the heart of the mountains. The good padres had a fine feeling for Nature, and whenever the trail slips from a mountain's shoulder into a fertile valley you will find a mission in a more or less perfect state of preservation.

Of La Purisima Concepcion there remains little more than a ruined cloister rising amidst the long grass and oaks of a hill-bound plain; but its close neighbors, San Buenaventura and Santa Barbara, are almost as good as new. Matins and vespers are still intoned in their dim chapels. You may see the soft-eyed padres walking and talking in their pleasant garden, or watch the lay brothers swinging hoe and shovel at their daily tasks.

Above San Simeon the trail disdains all commerce with other ways and runs for 90 miles under its own dignities and title of "The Old Spanish Trail." With absolute divorce from them comes also the assurety that you are following the very path blazed by Junipero Serra and used by his followers in their journey-

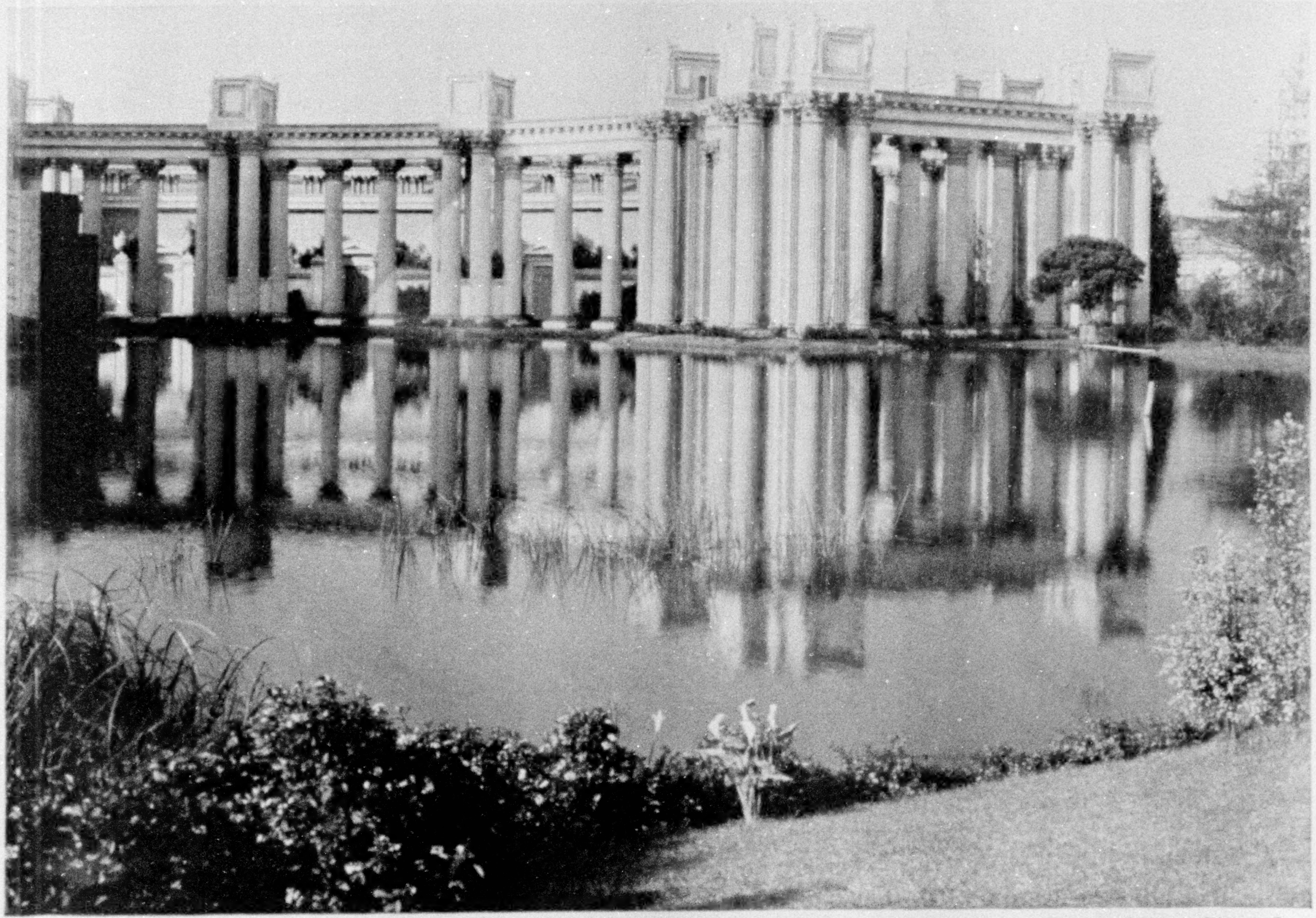


Photo by Pillsbury Picture Co.

THE PALACE OF FINE ARTS

As a study in color, architecture, and landscape gardening, the Panama-Pacific Exposition surpasses anything in the entire history of world's fairs. Where the Louisiana Purchase Exposition spent $3,000 an acre for landscape gardening, the Panama-Pacific spent $14,000, and if there was ever anything more beautifully gorgeous in history than the great California fair, the chronicles have failed to record it. The past and the present, the Occident and the Orient, the Northern Hemisphere and the Southern, have been ransacked for the inspirations that constitute the completed picture.

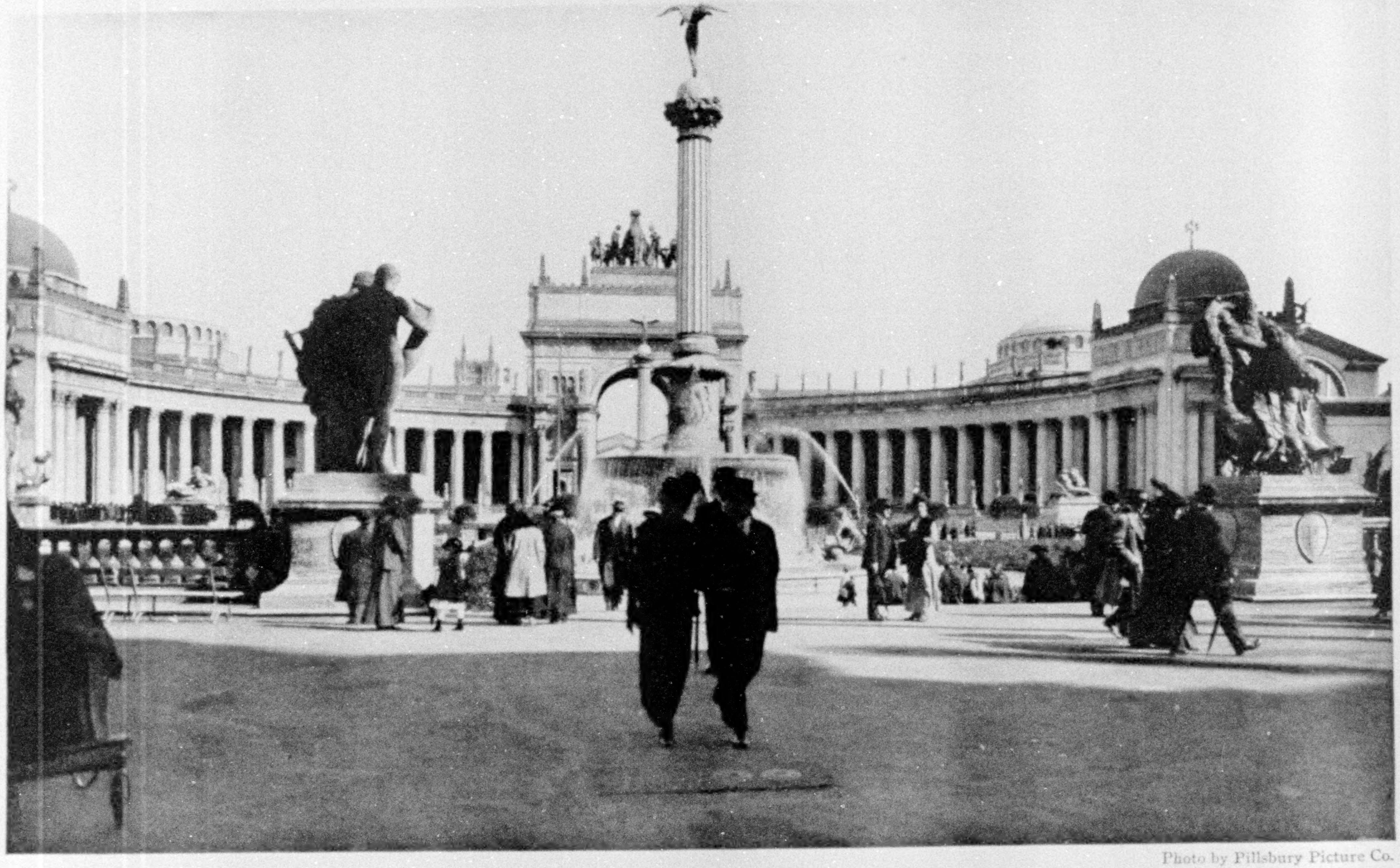
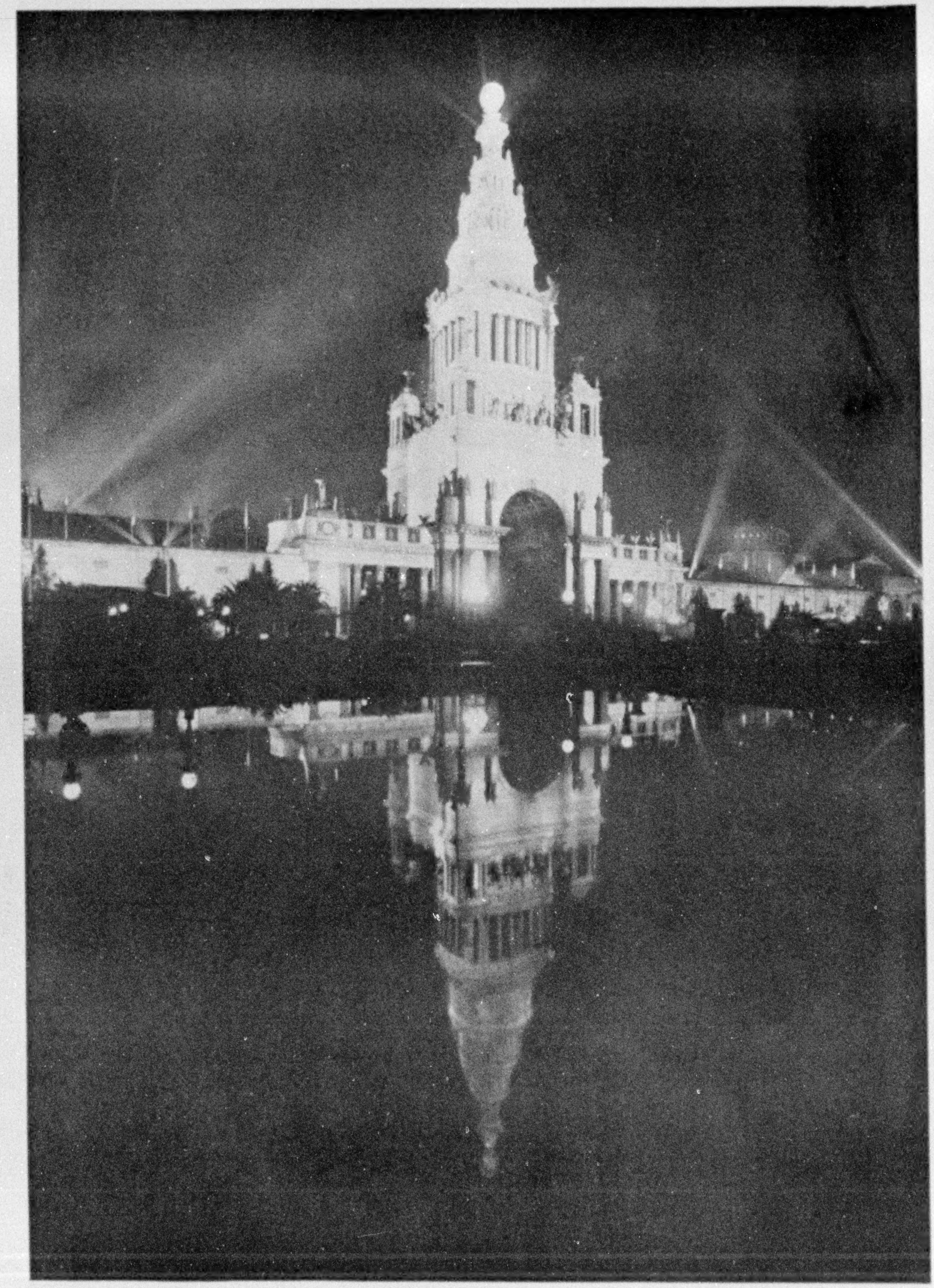


Photo by Pillsbury Picture Co.

IN THE COURT OF THE UNIVERSE, LOOKING TOWARD THE FOUNTAIN OF THE SETTING SUN AND ARCH OF THE RISING SUN

Passing through a Venetian court, the visitor emerges into the Court of the Universe, where the illumination reaches its climax in dignity, thoroughly in keeping with the grandeur of the court, where an area of more than ten acres is illuminated by two fountains rising 95 feet. A candle-power of half a million is used, and yet so wonderfully is the light directed that there is not a suggestion of disagreeable glare.

XUM



THE TOWER OF JEWELS AT NIGHT

Nothing short of genius could conceive the lighting effects of the Exposition, which were planned and executed by W. D'A. Ryan, of the General Electric Company. The gradual illumination at night is bewildering in its soft gradations of color and seems like a living page from the Arabian Nights. The reflection is in the West Lagoon of South Garden.

XUM

ings up and down the coast. Where your knee touches the worn face of a rock at a bend, there is a thrill in the thought that it was once touched by Junipero's robe.

Apart from these interesting historical associations, however, the trail is worth following for its own sake. For miles it runs like a narrow ribbon around the spurs and canyons at 1,000 feet elevation, almost perpendicular, above the blue sea. At no place is it wider than a mule's tread; wherefore pack-animals must be loaded carefully, for a scrape on the landward side has sent many a one down to its death on the surf-washed rocks below.

Next it climbs 4,000 feet to the crest of the range and lays at your feet, if not the whole world, at least a good slice of California—mountains and valleys on the one hand; on the other the vast blue sea. Then it drops again and enters the first of the redwoods; winds among pillar-like trunks in rose-brown shade, leaps silver streams, and so by wood, sea, and mountain comes presently to the Valley of the Sur, where the sunlight breaks in golden rain down through lacing alders and the river sings for you the same old song it gave to Junipero Serra.

From one thing to another, it leads on till the Carmel Mission heaves into view across a blue arm of the sea; and if you are in luck the mellow tone of a bell may come drifting across, spacing the roar of the surf, for services are sometimes held there.

HUNTING GRIZZLIES WITH STRYCHNINE

In a perfectly unfair and unkindly, yet quite natural, way, by liberal use of strychnine, the rancheros of the last generation wiped out the grizzlies. But the lynx is still plentiful. The mountain-lion quite often leaves his sign-manual in the form of a fresh-killed steer. The country abounds in deer. So many they are and hunted so little, they are very bold. Often they have followed me along the Spanish trail, and one night they came in droves to nibble fallen apples in the orchard of an abandoned farmstead where I had pitched my camp.

Trout are to be had in the streams in numbers that tempt one beyond the limit, and if you yearn for a change of fishing, a whale may be seen spouting offshore almost any day! What use you would have of him, supposing you caught him, is another question.

Sea-otter, however, is more practicable. Once in a while a pair will be seen, rolling in the surf or lying on their backs, playing with seaweed or bits of flotsam and jetsam like sportive kittens. So human they are that to kill one savors of murder; but dry salted, the skin brings from one to two thousand dollars on the market, and this goes a long way toward balancing sentimental regrets.

I suppose that Padre Serra, in the comfortable fashion of his day, spent at least a week covering the distance between Santa Barbara and Monterey. The railroad covers it in a few hours and offers second choice of route up the San Joaquin Valley, the great central valley of California. It averages from 40 to 50 miles wide and runs for 500 miles and lies, a great level lake of sunshine, between the towering, richly colored walls of the Sierra Nevada and Coast Range.

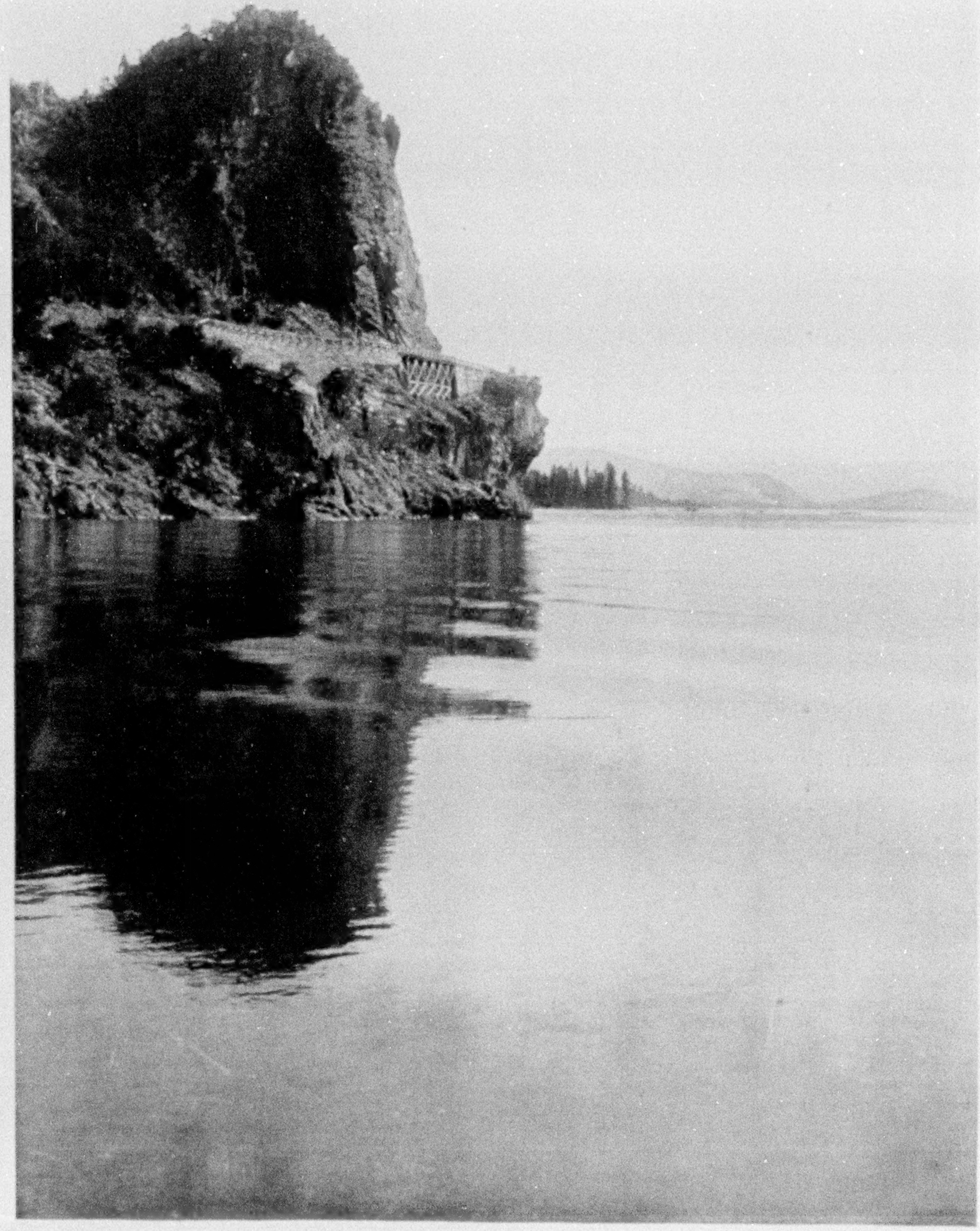
GEOGRAPHY THE SERVANT OF FICTION

Queer how closely geography is linked with fiction! Just as "Kipling" spells "India" for the majority of folks, so, by virtue of "The Octopus," Frank Norris owns the San Joaquin. Nowadays, however, he would find it hard to recognize his own, for gone, gone forever are the enormous wheat ranchos that filled the valley between the mountains with rolling seas of grain and furnished the motif for his story.

Yet the change is for the better. Chopped into a thousand vineyards and orange groves, the old ranchos now support populations of five or six thousand, where previously they gave employment to a hundred or two of nomad laborers for a short period of the year.

It is a wonderful country, this—rich, fat-soiled, laced with shining rivers that reverse the usual order of things and dwindle from good beginnings, where they issue from the Sierra canyons, into sterile river beds. Led through a thousand canals and ditches out to the thirsty

XUM



Courtesy of Southern Pacific Railway Co.

CAVE ROCK: LAKE TAHOE, CALIFORNIA

"The lake of lakes, a huge iridescent mirror, of 30 miles diameter, set in a frame of deep forests and snow-clad mountains" (see text, page 73)

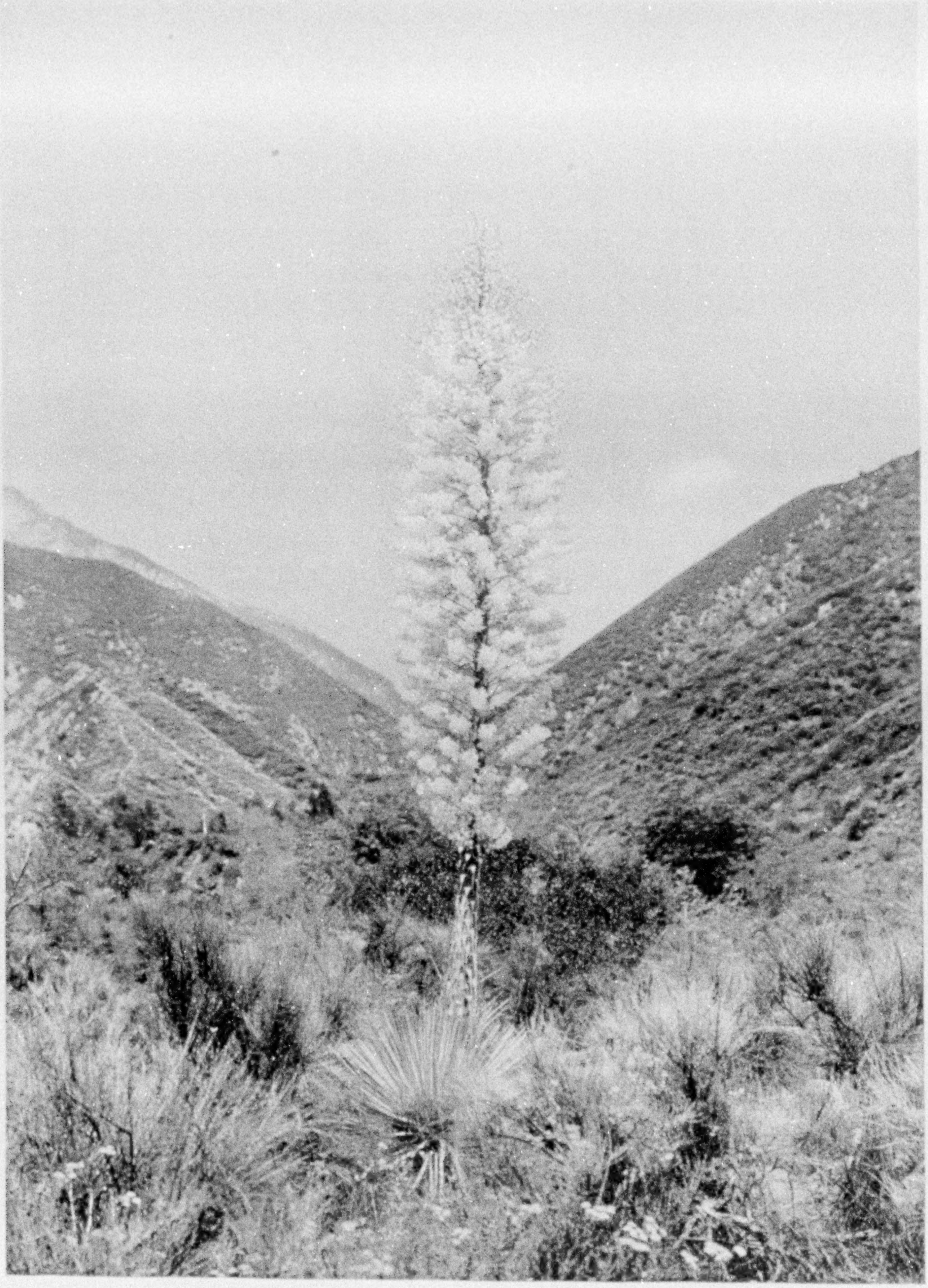


Photo by George R. King

YUCCA: SIERRA MADRE, CALIFORNIA

"Southward the desert runs to yucca, grotesque shapes that march with the train for leagues upon leagues, flinging their shrunken arms like posturing dwarfs. Elsewhere cactus chaparral clothes the nakedness of the land, and, in its season, this blossoms into sudden beauty. The yellow blooms of the *huisiche*, vermilion tips of the *okatilla*, and the magenta buds of the *nopal* . . . splash the dull green of the sage-brush with color" (see text, page 57)

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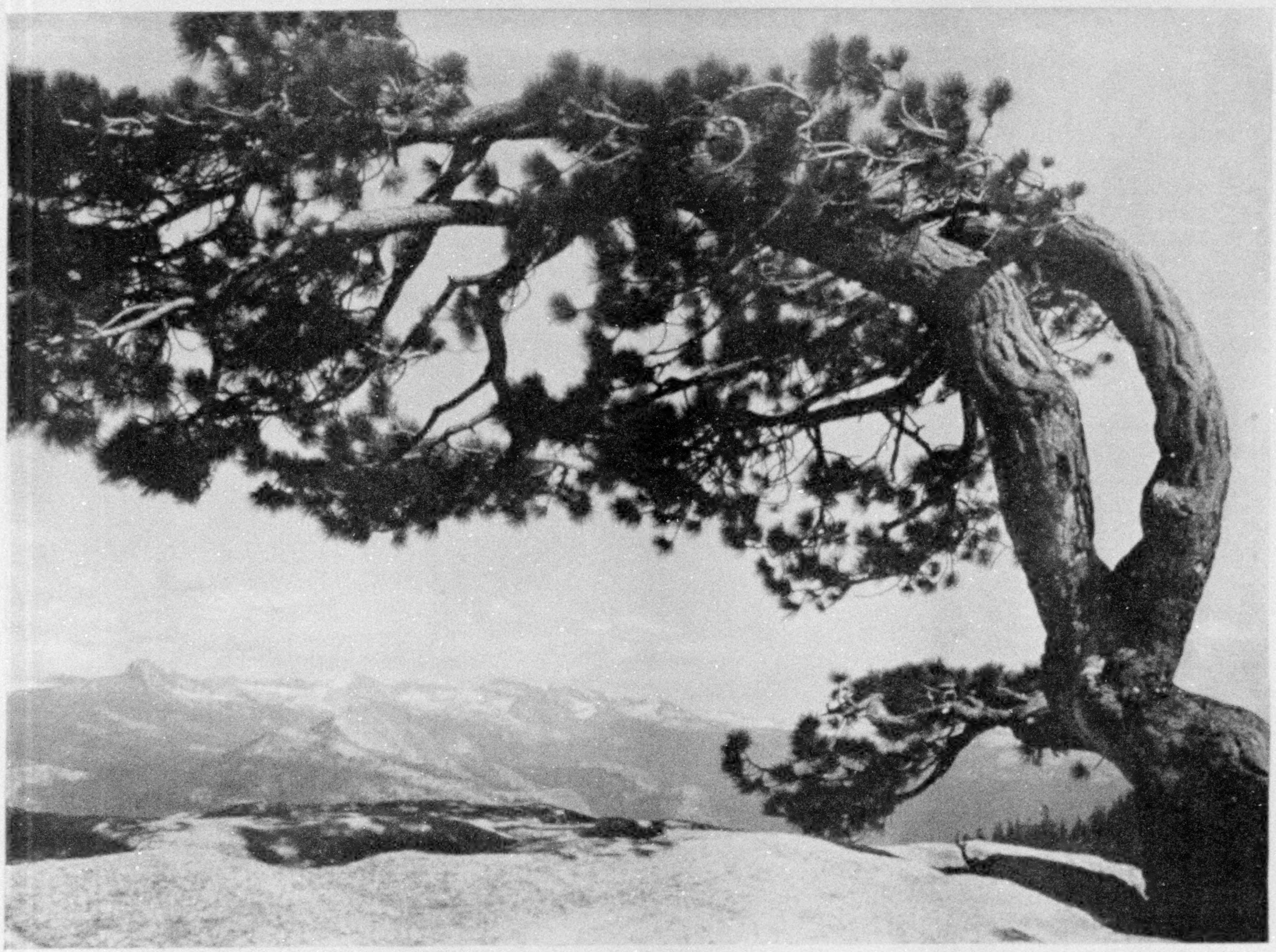

Photo by H. C. Tibbitts

THE HIGH SIERRAS FROM THE SUMMIT OF CENTRAL DOME, YOSEMITE PARK

"A few hours' ride on horseback brings one to the top of the canyon walls, from whence can be seen, one-half mile below, the quaint mountain village nestling at the base of the cliff, over which pours a roaring, snow-white river. Looking to the east, miles upon miles of ragged, sawtooth crest of the Sierra Nevada are clearly visible, with its great snowbanks and glaciers" land, their waters are transmuted by the sun's secret chemistry into olives and figs, peaches and nectarines, citrus fruits, nuts, raisins, dried fruits; amber wines clear as the Sierra air; a wealth of produce that justifies a report similar to that which the Israelite spies brought from the Land of Canaan—"a land flowing with milk and honey."

THE VALLEY OF HEAVEN

From the town of Merced, midway of the valley, a branch railway runs up the river of the same name to California's crowning glory, the Yosemite National Park. Lacking the immensity of the Grand Canyon of Arizona, it is still one of the world's greatest gorges. From the edge of beautiful forests you overlook 7 miles of the canyon, that averages in width from a half mile to a mile and is hewn a mile deep in the solid granite of the range.

Many books have been written about the Yosemite and the companion valley, Hetch-Hetchy. Some are wonderful books—great books like those of John Muir—which communicate as much as may be conveyed through words of the grandeur of its vistas, nobility of its granite spires and domes, beauty of the lacy falls that leap from the rim into the depths beneath. Yet when all is told the wonder and mystery of Yosemite still remain unfolded. The feeling it inspires lies in the domain of the "incommunicable," that thrills, but lies beyond the province of words. It has to be seen to be felt.

Muir writes of it: "No temple made with hands can compare with Yosemite. Every rock in its walls seems to glow with life. Some lean back in majestic repose; others absolutely sheer, or nearly so, for thousands of feet, advance beyond their companions in thoughtful attitudes. . . . Awful in stern, immovable majesty, how softly these rocks are adorned, and how fine and reassuring the company they keep: their feet among beautiful groves and meadows, their brows in the sky, a thousand flowers leaning confidingly against their feet, bathed in floods of water, floods of light, while the snow and waterfalls, the winds and avalanches and clouds shine and sing and wreathe them about as the years go by, and myriads of small winged creatures—birds, bees, butterflies—give glad animation and fill the air with music.

"Down through the middle flows the crystal Merced, River of Mercy, peacefully quiet, reflecting lilies and trees and the onlooking rocks; things frail and fleeting and types of endurance meeting and blending in countless forms, as if into this one mountain mansion Nature had gathered her choicest treasures to draw her lovers into close and confiding communion with her."

Yet, wonderful as it is, Yosemite is still but one of a hundred—aye, a thousand—canyons, great gorges from two to five thousand feet deep, great streets of the mountains.

THE MONARCHS OF THE TREE KINGDOM

This, too, is the country of the big tree, *Sequoia gigantea*, the king of all forests. Within 20 miles of Yosemite stand three great groves—Merced, Mariposa, and Tuolumne. Below Kings River, however, redwood forests run unbroken for nearly 70 miles; and they are also to be found in scattered tracts along the coast and in the interior, running northward for about 300 miles.

Here, as with Yosemite, words fail in the attempt to convey an adequate impression of these noble trees. As old as the Pyramids, taller than man's greatest monuments, and more enduring, they rise in serene majesty above the lower forests. In the Calaveras grove four trees exceed 300 feet in height.

John Muir once measured a fallen monarch that ran 340 feet over all and was 35 feet 8 inches in diameter 4 feet above the ground. A count of the rings proved it to be 4,000 years old. It was indeed, in its prime, a noble tree, 27 feet in diameter at the beginning of the Christian era.

A curious thing about the big tree inheres in the fact that it keeps an accurate chart of the pulsations of climate. In wet seasons it naturally adds a larger rim to its growth, and so, by their measurement, a weather curve may be plotted back through the ages.

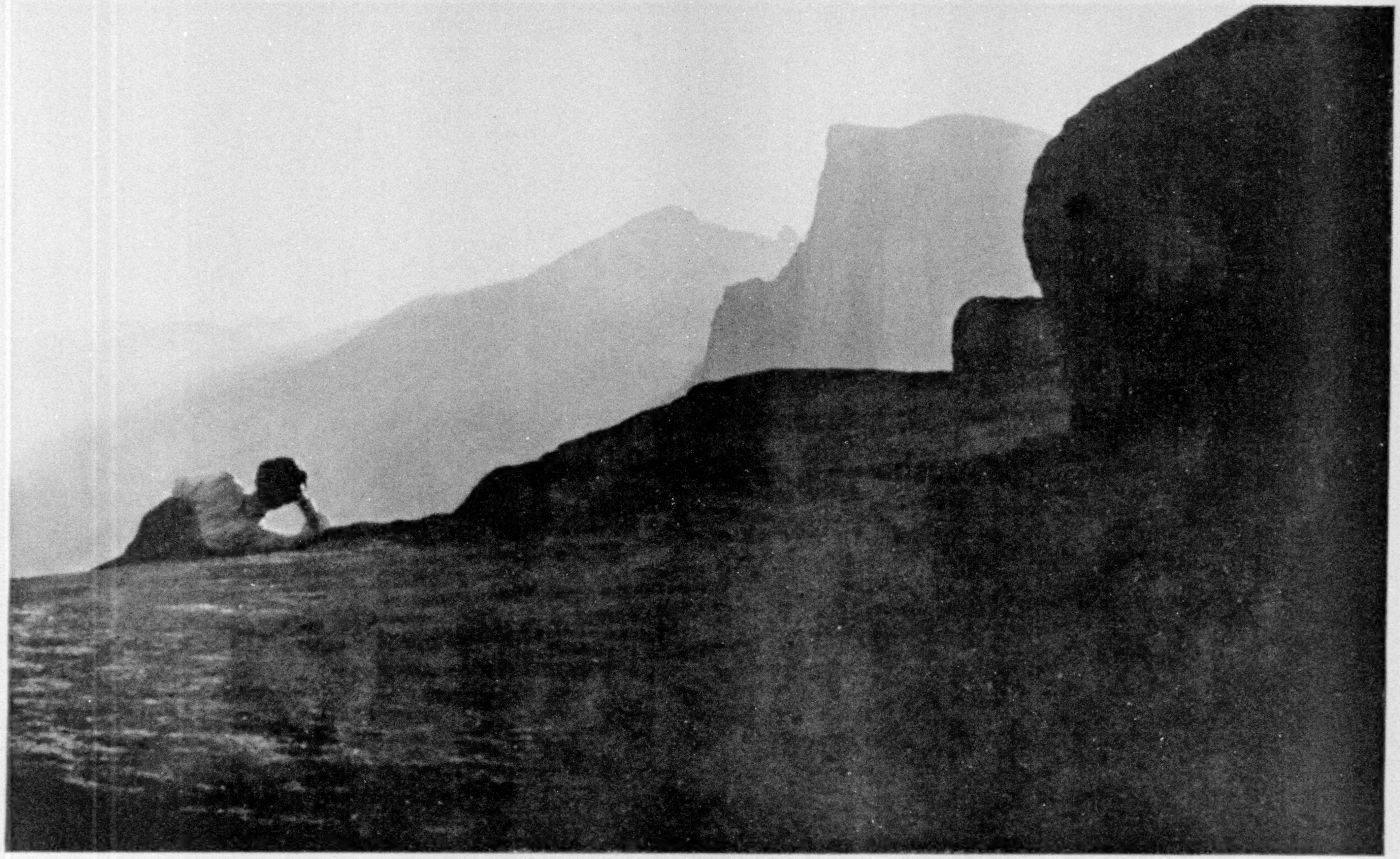

Photo by H. C. Tibbitts

HALF DOME FROM GLACIER POINT

"Awful in stern, immovable majesty, how softly these rocks are adorned, and how fine and reassuring the company they keep; their feet among beautiful groves and meadows, their brows in the sky, a thousand flowers leaning confidingly against their feet, bathe in floods of water, floods of light, while the snow and waterfalls, the winds and avalanches and clouds shine and sing and wreathe them about as the years go by, and myriads of small winged creatures—birds, bees, butterflies—give glad animation and fill the air with music!" (see text, page 67).

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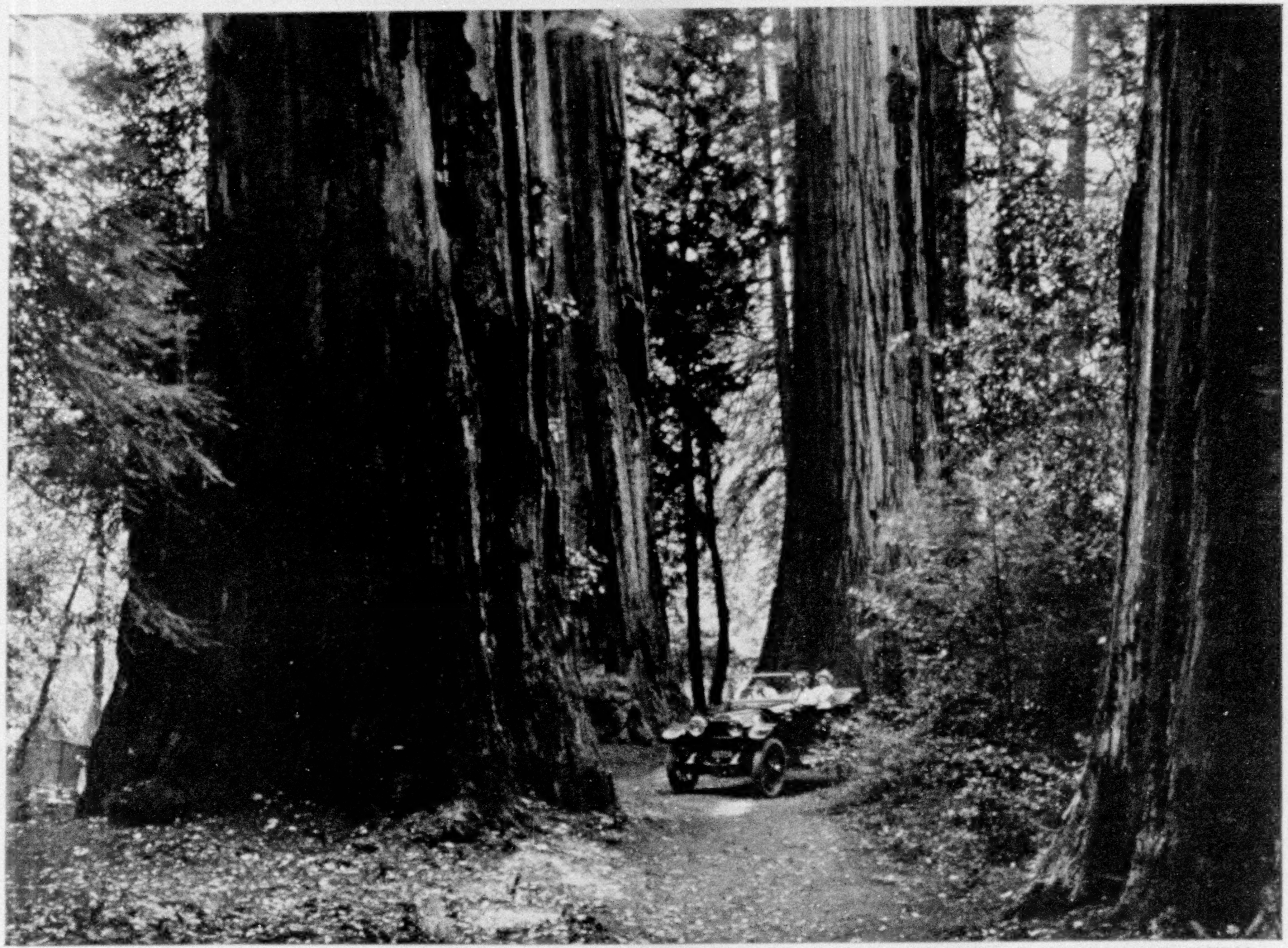
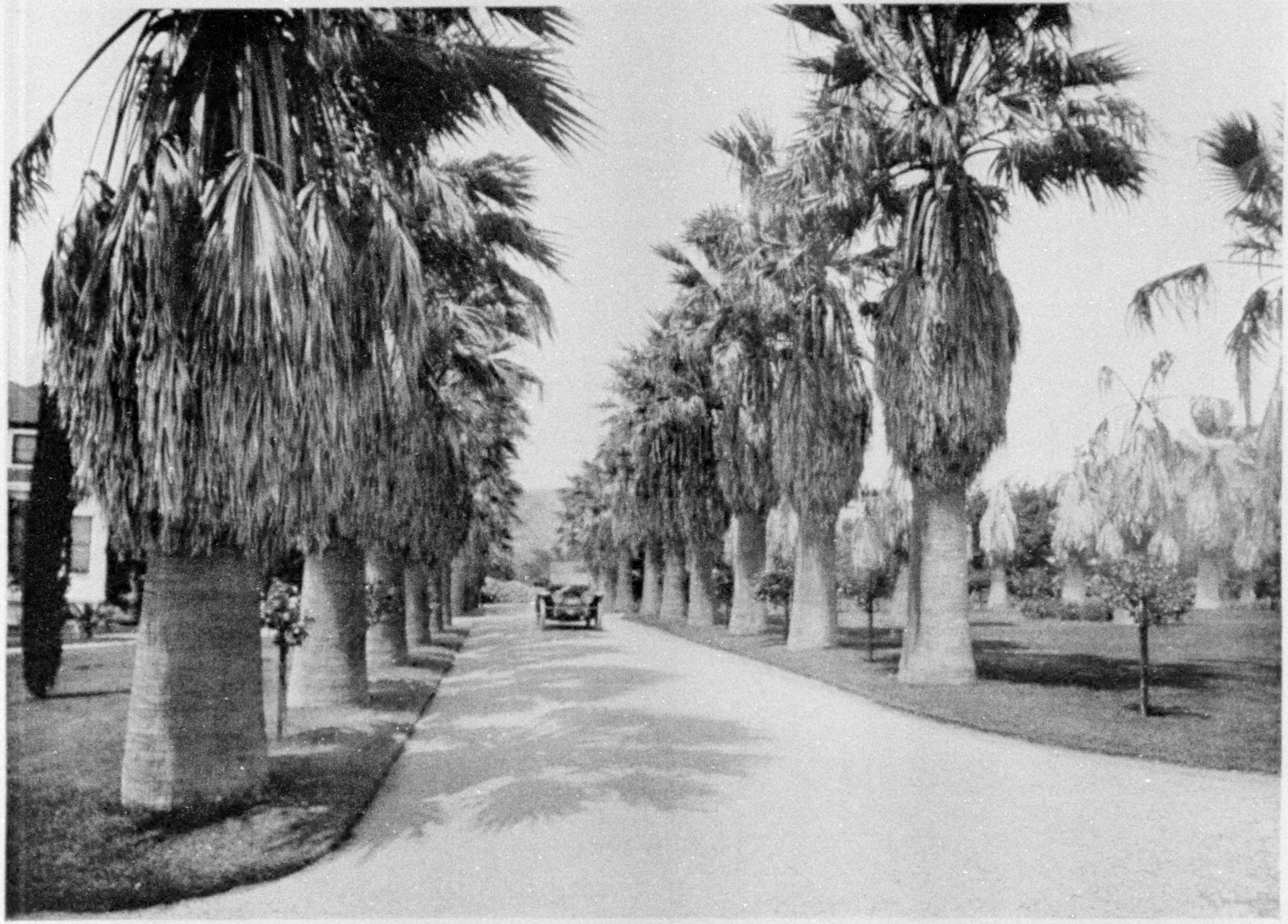


Photo by H. C. Tibbitts

CLOISTER AISLE: CALIFORNIA STATE REDWOOD PARK, NEAR BOULDER CREEK, CALIFORNIA

If the groves were God's first temples, the giant redwood forests of California are His greatest. "Here, as with Yosemite, words fail in the attempt to convey an adequate impression of these noble trees. As old as the Pyramids, taller than man's greatest monuments, and more enduring, they rise in serene majesty above the lowest forest. In the Calaveras Grove four trees exceed 300 feet in height. John Muir once measured a fallen monarch that ran 340 feet over all and was 35 feet 8 inches in diameter at a point 4 feet above the ground. A count of its rings proved it to be 4,000 years old" (see text, page 67).



THE GROUNDS OF PALMDALE MISSION: SAN JOSÉ, CALIFORNIA

"There could be no pleasanter trip than to follow the footsteps of the padres up the coast. You will have to go ahorse, for the way, a narrow mule path, is sometimes washed by the Pacific surf, and again it leads into the heart of the mountains. The good padres had a fine feeling for nature, and whenever the trail slips from a mountain's shoulder into a fertile valley, you will find a mission in a more or less perfect state of preservation" (see text, page 59).

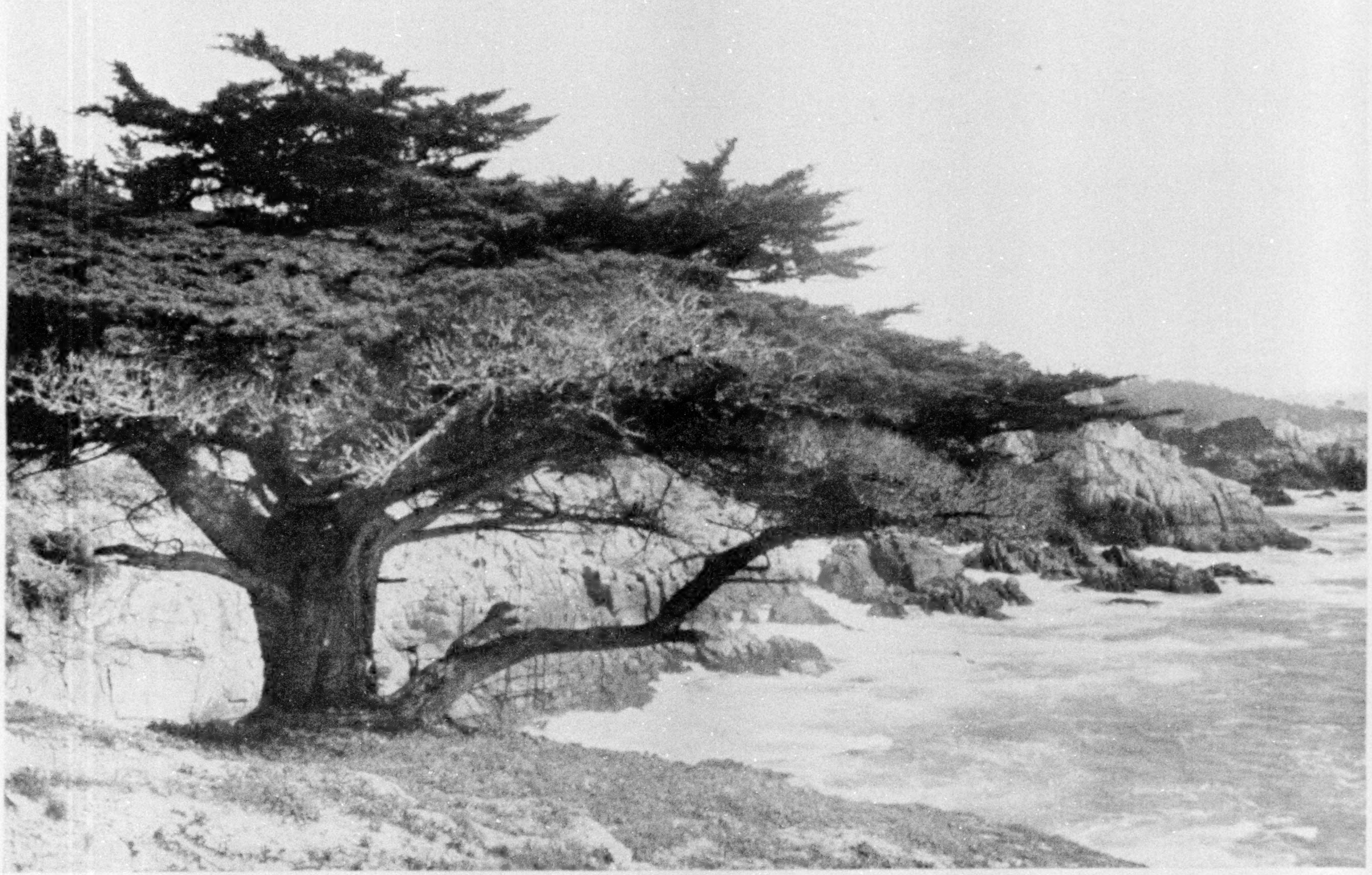
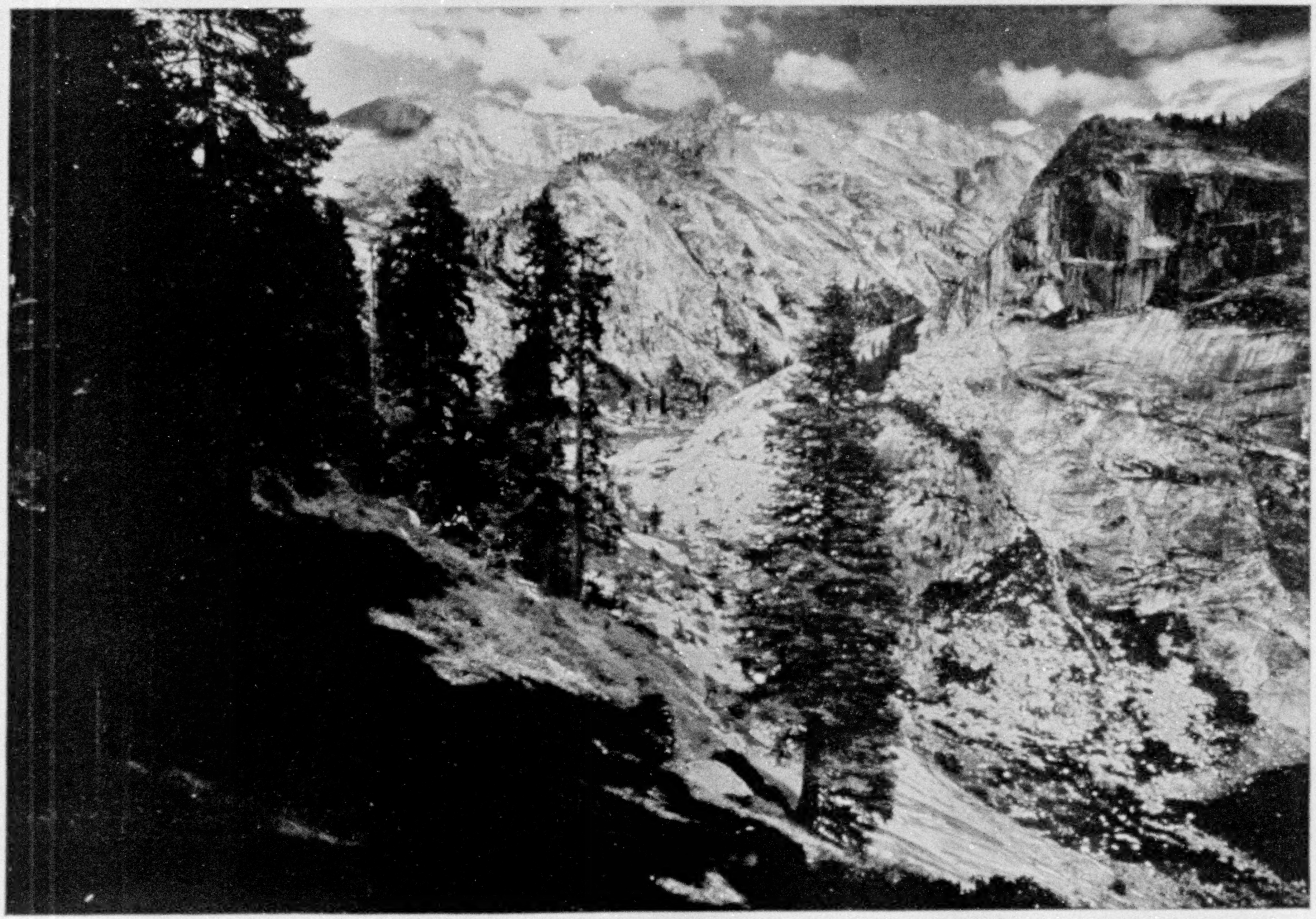


Photo by George R. King

MONTEREY COAST: CALIFORNIA

"Arcady lies just over yonder, and by that Castilian font Pan pipes as of old, calling his subjects to play. Care cannot follow into those wildwoods; once buried in the immensity of Nature's breast, men and women, children all, find surcease from every sorrow, 'the world forgetting and by the world forgot.'"—GILBERT.



THE KAWEAH CANYON FROM DEER CREEK TRAIL, TO KERN RIVER CANYON : CALIFORNIA

"Next it climbs 4,000 feet to the crest of the range and lays at your feet, if not the whole world, at least a good slice of California—mountains and valleys on the one hand; on the other the vast blue sea. Then it drops again and enters the first of the redwoods; winds among pillar-like trunks in rose-brown shades, leaps silver streams, and so by wood, sea, and mountain comes presently to the Valley of the Sur, where the sunlight breaks in golden rain down through lacing alders, and the river sings for you the same old song it gave to Junipero Serra" (see page 63).

TREE MEMORY MORE ACCURATE THAN MAN'S

We are told, for instance, that a prolonged drouth afflicted Israel during the reign of the wicked King Ahab; and, proving at once the truth of the Biblical record and the universality of the weather, the drouth is found strongly marked by an attenuated ring in the larger trees.

It has been said that the Sequoia is dying out; but expert testimony proves that it is not only producing bountifully over large areas, but also that the young growths win out in the struggle for existence with the pine and fir around them. Over them, too, it possesses an inestimable advantage—it is indestructible by fire or insect plagues and, apparently, has no diseases. Barring accident, it is immortal, and as California has awakened at last to her duty in the preservation of these noble trees, it would seem that they are destined to remain forever towering monuments in her list of glories.

Northward of Yosemite, among the glaciers and snow-clad peaks of the Sierras, the railroad lines enter California through mountain portals. By one you come to Tahoe, the lake of lakes, a huge iridescent mirror of 30 miles diameter, set in a frame of deep forests and snow-topped mountains. Another runs down the Feather River Canyon, that wonderful street of the mountains that leads by tumbling waters, lacy, silver cascades, to the warm plains beneath.

From both, views are obtained—views on views, constantly changing, increasingly beautiful, that have no superiors in the mountain scenery of the world. Or you may drop down through the northern portals of the Siskiyou Range past Mount Shasta's great white cone and pass through deep woods to the Sacramento River and follow its stream to its confluence with San Francisco Bay.

MAKING THE PEOPLE'S PLAYGROUNDS AVAILABLE

The Secretary of the Interior, Franklin K. Lane, is carrying to completion the new policy inaugurated in establishing permanent camps within the national parks, which will afford a high degree of practical comfort and utility to all who come, and at such a minimum cost that thousands can now take advantage of the opportunity offered to spend healthful vacations in this wonderland of nature, which heretofore has been prohibitive to many because of the expense. It is proposed to equip all of the large national parks in this way with model camps, so that individuals or parties can live under canvas close to nature, yet safeguarded and assisted in every way by government supervision.

Drop from the cars at any place and you will find yourself in fisherman's or hunter's country. Rainbow trout swarm in the mountain and hill streams. Striped bass that run to 30 pounds—no better fighting fish in any waters—abound in the river deltas. Black bass, of both small- and large-mouthed varieties, are fished for in San Francisco Bay.

Salmon are best at Monterey, and for tuna—which run up to 300 pounds—you go to Catalina Island. Steelheads afford splendid sport in the river deltas during January. Catfish, perch, carp, and salmon trout are found in all streams.

It is also a hunter's paradise. Nowhere will you find better duck shooting than in the Suisun marshes or the great tule swamps around San Francisco Bay. Grouse, quail, and wood pheasants are found everywhere, even in the suburbs of some towns. Bears, the mountain-lion, lynx, and coyote are easily found, and the country, as before said, is full of deer. So, be your sport what it may, California, somewhere in her environs, will give it full play.

A BEAUTIFUL WELCOME ON EVERY SIDE

North, south, east—entered by any of these portals, California is equally fair. There remains the west, and if I be given my choice, let me come in from the sea. The eastern visitor who journeys to the Exposition by water through the canal or by any of the scenic routes will choose wisely and well. If by water, during lazy, somnolent days he will have watched the shore, with its palm-fringed beaches, lace of breaking surf, slip by as in a dream; and when California heaves in sight, seen through a silver haze, the

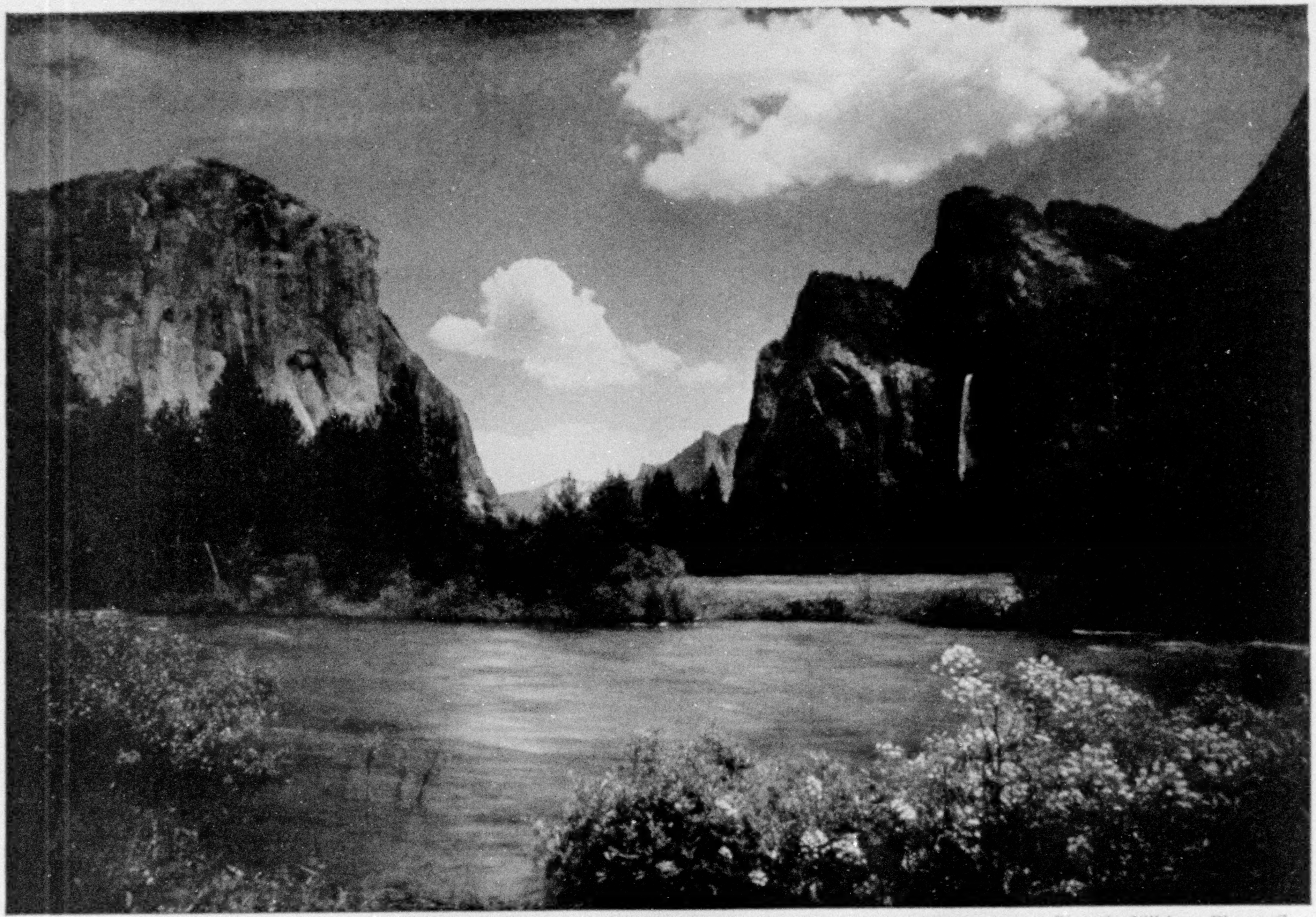


Photo by Pillsbury Picture Co.

BRIDAL VEIL FALLS: MERCED RIVER

"Down through the middle flows the crystal Merced, River of Mercy, peacefully quiet, reflecting lilies and trees and the onlooking rocks; things frail and fleeting and types of endurance meeting and blending in countless forms as if into this one mountain mansion Nature had gathered her choicest treasures to draw her lovers into close and confiding communion with her" (see text, page 67).

Photo by H. C. Tibbitts

MT. SHASTA FROM MT. WILSON

California is the second largest State in the Union. Joined with Texas, it would have a larger area than France and Germany together. In Mt. Whitney it has the highest elevation in the United States outside of Alaska, and in Death Valley the lowest area; in the Salton Sink it possesses the hottest weather in the country, and on Mt. Whitney and Mt. Shasta perhaps the coldest; in its southern desert it has the least rainfall, and in its northwestern coast counties almost the maximum rainfall of the country.

XUM

golden coast exactly matches the poems of Joaquin Miller and tales of Bret Harte. Its wonder and mystery loom in those distant mountains. Any fortune might be hidden behind their barriers.

Every point and inlet—San Diego, San Pedro, San Luis Obispo, Arguello, Concepcion—recall the padres and bearded Dons. Sir Francis Drake, in company with two centuries of Spanish navigators, missed the Golden Gate. But times have changed, and today one can sail on a splendid ocean liner from New York through the Panama Canal to the Golden Gate in 17 happy days. Slipping through the heads one morning, should you come by water, you come suddenly upon a sight that causes you to rub your eyes and look again to make certain that it is not a page from the "Arabian Nights."

CAN THINGS UNRIVALED BE PICTURED IN WORDS?

How shall one describe it, this wonderful city that is a fitting setting for the crowning jewel of all the expositions. A walled town of the Orient, its green and golden domes, mosaic towers, sculptures, arches, and old ivory façades loom in shimmering mists of color. The basic colors are blue and gold—the gold of California's hills, blue of her sunny skies—and these were chosen wisely, for they belong to the Orient, where violent color is quickly toned by the sun to soft pastel shades.

The pale greens are those of ice. Those swelling green domes might have been quarried from Sierra glaciers, the gold from California's mines. The limestone ranges of Monterey lay just such façades along the sea

The Mojave Desert inspired the ambers and those pale golds. Bound into a whole by the spell of color, the Exposition sits, indeed, like a great gem in its setting of street-crowned hills. Whether seen from above or viewed from the sea, the first effect is the same—of beauty, elusive, mysterious, aloof.

Very fittingly, the California Host Building, which rambles in the happy mission fashion over five broad acres, stands on the "Marina," a beautiful esplanade that runs for a couple of miles along the Golden Gate. Low and wide in the main, it rises in the center to upper stories with bell towers surmounting a chapel front that carries, somehow, a suggestion of the desert pueblos.

YESTERDAY AND TODAY

Its back wall is almost washed by the tides—the same tides that brought Fathers Cambon and Palou ashore in the boat of the *San Carlos* to establish the *presidio* and mission of St. Francis de Assisi two centuries ago. What a difference between this superb building and the block-houses and log chapel within a stockade they erected on this very spot! Yet it is the lineal descendant of the solid structures they erected later. Junipero Serra would have delighted in this building. One almost looks to see him, with his friend and faithful lieutenant, Palou, pacing the cloisters that surround a flowering patio.

The eight exhibition palaces are commodiously arranged in a vast quadrangle that is situated between two great avenues and bisected down its length by a central avenue which is stopped at each end respectively by the gigantic Hall of Machinery and the Palace of Fine Arts. Looking down this central axis from the south end, the eye beholds a vision of courts and connecting Venetian gardens, court after court, seen through gigantic arches crowned with heroic groups, and stopped over half a mile away by the lovely Palace of Fine Arts.

THE AWE OF PERFECT BEAUTY

The vision excludes, at first, all else from the mind but the awe inspired by perfect beauty; and when it is ready to take cognizance of other things, the next great impression is of the surpassing fitness, perfect coincidence of the event and the place. If you came by water, the long white wake of the ship down the Pacific to the canal remains fresh in your memory. If you came overland by any of the splendid scenic routes, then, seen through great arches, frequent glimpses of the Golden Gate compel perpetual recognition of the great economic fact behind all this beauty—the opening of the Panama Canal.

Photo by Gabriel Moulin

A TYPICAL GARDEN IN PIEDMONT, ACROSS THE BAY

No garden of Eden could be richer in flowers than are the cities across the bay from San Francisco, and there can be found no greater civic pride than is displayed by the residents. Every home, be it rich or poor, has its burst of bloom, and even the streets in the residential sections are veritable rose gardens.

XUM

Courtesy of Southern Pacific Railway Co.

A BIG TREE AND A LONG TRAIN IN CALIFORNIA

Nowhere else in the world do such massive living things exist as the big trees in the State of California. Not only are they the greatest of all living things in bulk, but they are the oldest. They had begun their existence on earth before Joseph appeared at the Court of Pharaoh and interpreted the dream of the lean kine and the fat. From that time forward they have written their record of the lean years and of the fat ones of the world's history.

In other ways it is kept, too, in the forefront of your mind. The motifs of sculpture, mural paintings, and decorations lead up through historical sequences that begin with the voyage of Leif Ericson and his Norsemen to the coast of Maine, follows the Spanish conquest and Anglo-Saxon progression westward to the culmination in the heroic groups of the "Eastern and Western Nations" that crown the lateral arches in the "Court of the Universe."

The most remarkable phenomenon in commercial history is and has been the slow progression of the economic power westward from its ancient source in the East. Through Asia and Europe it slowly passed, each principal nation holding it for its little hour before it crossed the Atlantic to us. From the beginning of time this movement proceeded steadily toward the culmination prophesied in a verse of Whitman's that is hewn on the face of the western arch beneath the pioneer group:

> FACING WEST FROM CALIFORNIA'S SHORES,
> INQUIRING, TIRELESS SEEKING WHAT IS
> YET UNKNOWN, I, A CHILD VERY OLD, OVER
> WAVES TOWARD THE HOUSE OF MATERNITY,
> THE LAND OF MIGRATIONS, LOOK AFAR—
> LOOK OFF THE SHORES OF MY WESTERN
> SEA, THE CIRCLE ALMOST CIRCLED.

PROPHECY FULFILLED

That prophecy is now fulfilled. Commercial dominion, it is true, now rests with us, and, thanks to the impetus that is certain to result from the European war, will attain power and importance under us such as the world has never seen before. But, flowing on still west-

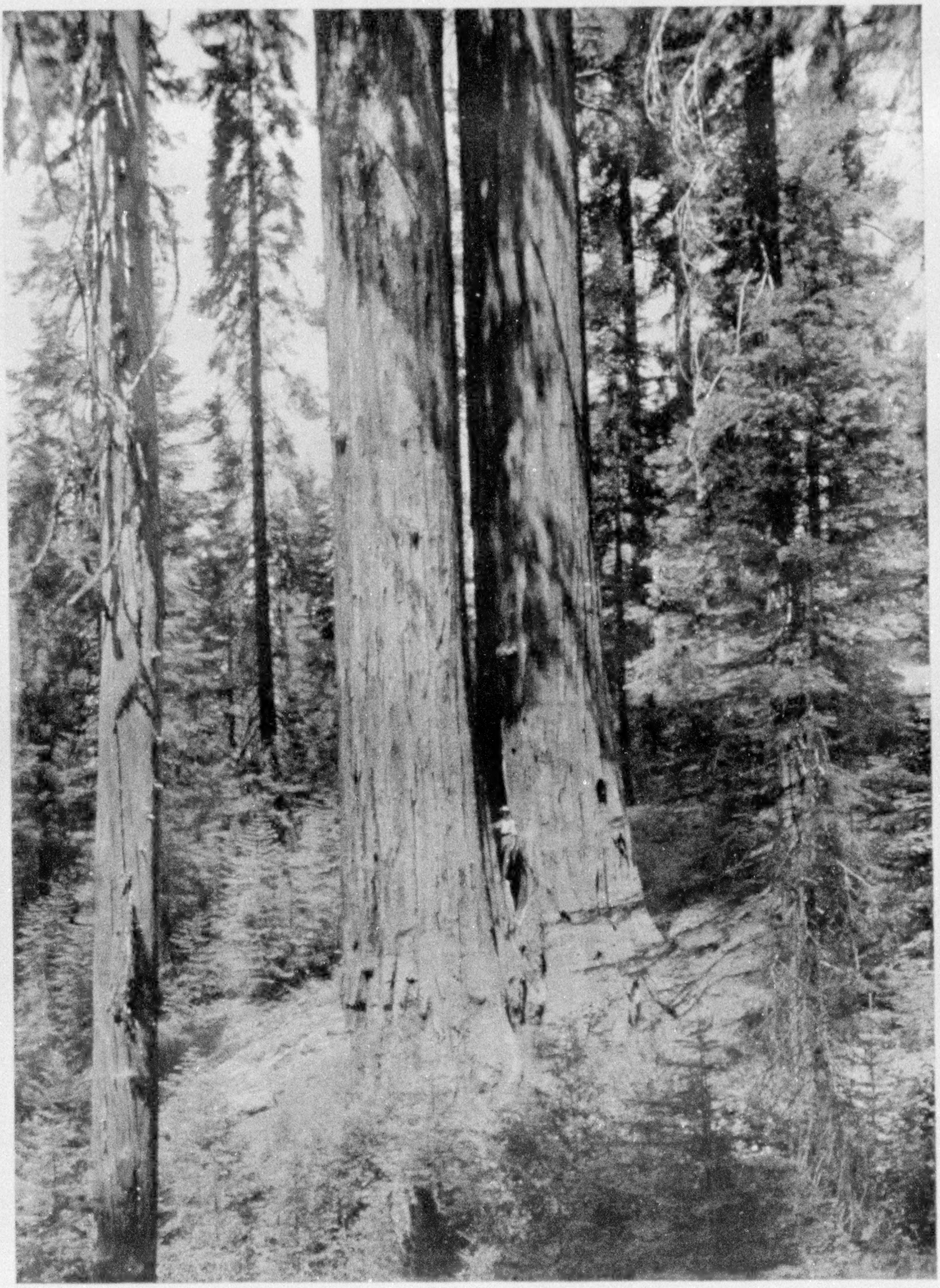


Photo by George R. King

THE TWINS: TUOLUMNE GROVE, CALIFORNIA

It is a remarkable fact that the most accurate record of the world's weather, during the past 4,000 years, which we have is written by the trees. The patient comparisons by means of delicate measuring instruments, which have been made by forest experts, reveal the fact that the records written in the past quarter of a century by the United States Weather Bureau and by the big trees of California tell exactly the same story. We are therefore permitted by an examination of the rings of the centuries that have gone before to read of the years of abundance and famine in the land. The "oldest inhabitant" may declare that the winters were once colder and the summers once hotter than now; that there was more rainfall in the older days than now; but the big tree's memory is never at fault.

XUM

ward, Occidental civilization has inundated the Orient, and now comes the backwash—first, in the form of national exhibits from Japan and China that exceed in value those of any other principal power; second, in a fast-growing commerce, the visible signs of which—the great liners of the Toyo Kisen Kaisha and big, black freighters—are to be seen heaving in and out of sight from this court at any hour of the day.

Without the canal the natural expansion of trade with the Orient would have done great things both for California and the entire Pacific coast; but its opening has caused an acceleration that is without parallel in history. In three months the trade of San Francisco with Europe increased 100 per cent; with New York and Atlantic ports it rose 260 per cent; and whereas only three main lines of steamships used the port previously to the opening, 16 main lines have now established regular sailings; and though every month brings still more lines, their accommodations are insufficient for the cargoes offered. Single vessels have left as much as 2,000 tons on the wharves.

WORLD'S NOBLEST MARINE VIEW

It would almost seem that when Nature lifted a spadeful out of the Coast range and inundated a thousand square miles of valley to form the largest harbor in the world she had in view the present situation. Seen from any of San Francisco's principal hills, the harbor presents one of the world's noblest marine views.

Directly opposite, Berkeley, Oakland, Alameda, and Piedmont, the bay cities, doze in the heat haze within a cradle of tawny hills. Alcatraz Island and Yerba Buena loom in the foreground through a drift of mist. All along the water front and far up the bay, tugs and fat-bodied ferry-boats, liners from the Orient, tramp steamers in from the canal, blunt-nosed scows and the stern-wheel river boats, lay a lace of white across the blue.

From the wharves that thrust stubby fingers into the stream uprises a forest of masts. A glass would show a second forest in the still waters of the Oakland harbor. The whirr and rattle of winches, stevedores' whistles, hysteria of a pile-driver, clangor of bells and sirens punc-

Photo by Pillsbury Picture Co.

GRIZZLY GIANT TREE: MARIPOSA GROVE

"It has been said that the sequoia is dying out; but expert testimony proves that it is not only producing bountifully over large areas, but also that the young growths win out in a struggle for existence with the pine and fir around them" (see text, page 73).

tuate the dull roar of the world traffic in course below.

A busy as well as a lively scene, it is nevertheless merely a faint indication of that which the future holds in store. On the Oakland side half a dozen sea-walls already thrust long stone fingers miles into the bay, and between them powerful suction dredges are filling in the flats. Ten miles of water front are in course of preparation for docks and wharves to care for the increased trade, and there is no limit.

If necessary, a hundred miles of water front could be developed around the bay, with close connections between ship and rail; and some day it *will* be needed. When the war is over and the stream of European immigration is diverted from the Atlantic seaboard through the canal into the wide, empty spaces of the Pacific coast; when these begin to yield corn, and olives, and oil, and wine instead of chaparral; when a thousand new towns and cities shall multiply the demand for manufactures; when mills, and mines, and factories, and new industries of a dozen sorts spring up all over the land, and more and more lines of steamships radiate from San Francisco all over the western world; then, wide as are its waters, this beautiful harbor will be black with shipping as a northern lake on the return in spring of the waterfowl.

A WORLD EMPIRE

A hundred ships will lie at anchor where one now dots the shining expanse. In these pleasant climes, where snow is a phenomenon and there is no winter cold to chill man's energies and consume his summer earnings, where the earth yields more abundantly and variously of her fruits and grains, with the backwash from the Orient lifting trade to its highest levels, will undoubtedly arise one of the world's greatest commercial empires.

It is wonderful as it stands today—the more wonderful when one contemplates the complete ruin which overwhelmed San Francisco less than ten years ago. Sitting on a fire-swept hilltop, in the midst of 27 square miles of ruins, nine years ago, I penned the following dispatch for a New York periodical:

Photo by Pillsbury Picture Co.

THE ROAD WINDS AMONG THE GIANT REDWOODS

"Over the pine and the fir the sequoia possesses an inestimable advantage. It is indestructible by fire or insect plagues and, apparently, has no diseases. It would seem that they are destined to remain forever towering monuments in California's list of glories" (see text, page 73).

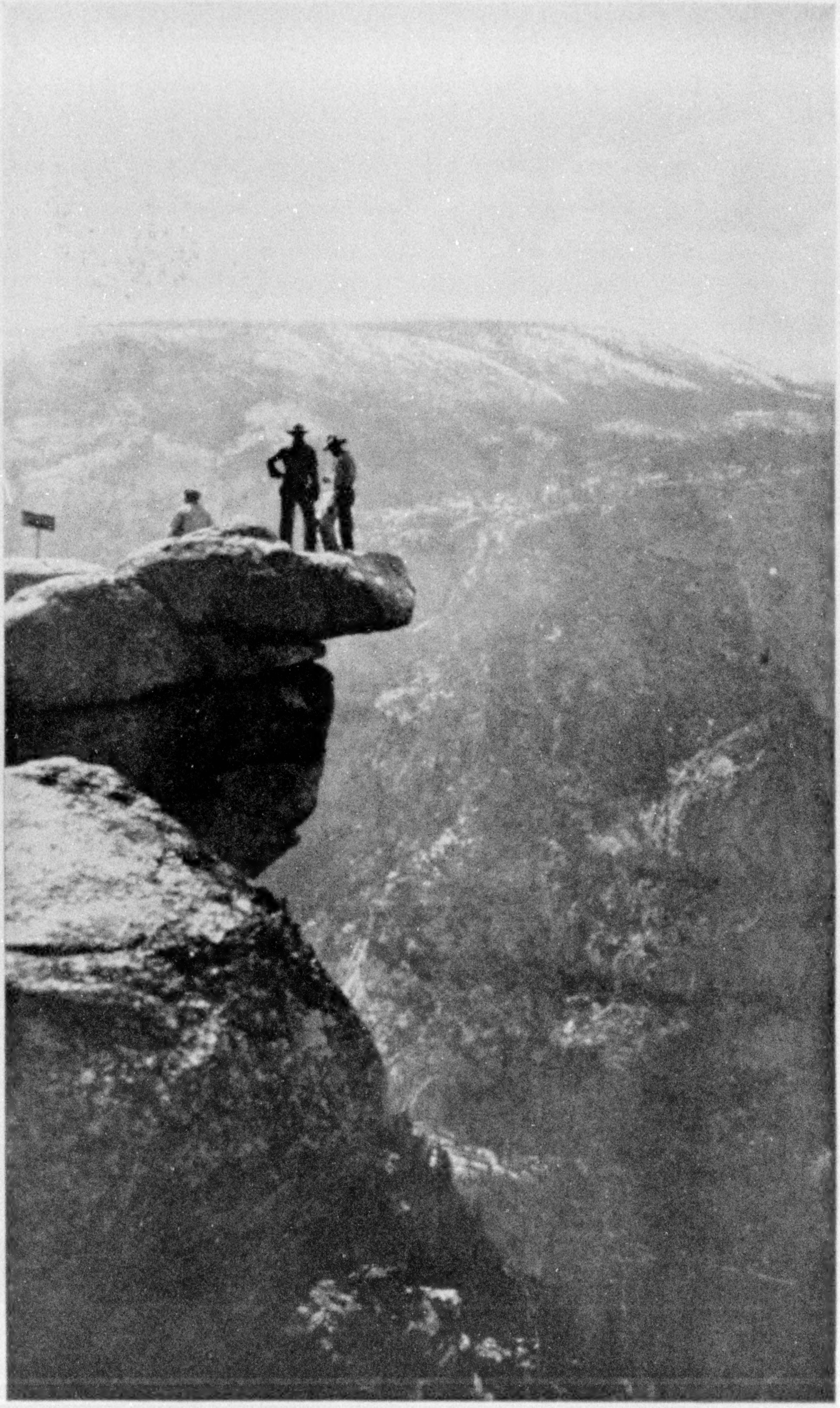


Photo by John Oliver La Gorce

OVERHANGING ROCK: YOSEMITE VALLEY

A remarkable rock reaching out over the side of Glacier Point, from which one can look down upon the floor of the valley, nearly a mile and a half below. Note the guides grouped on the edge.

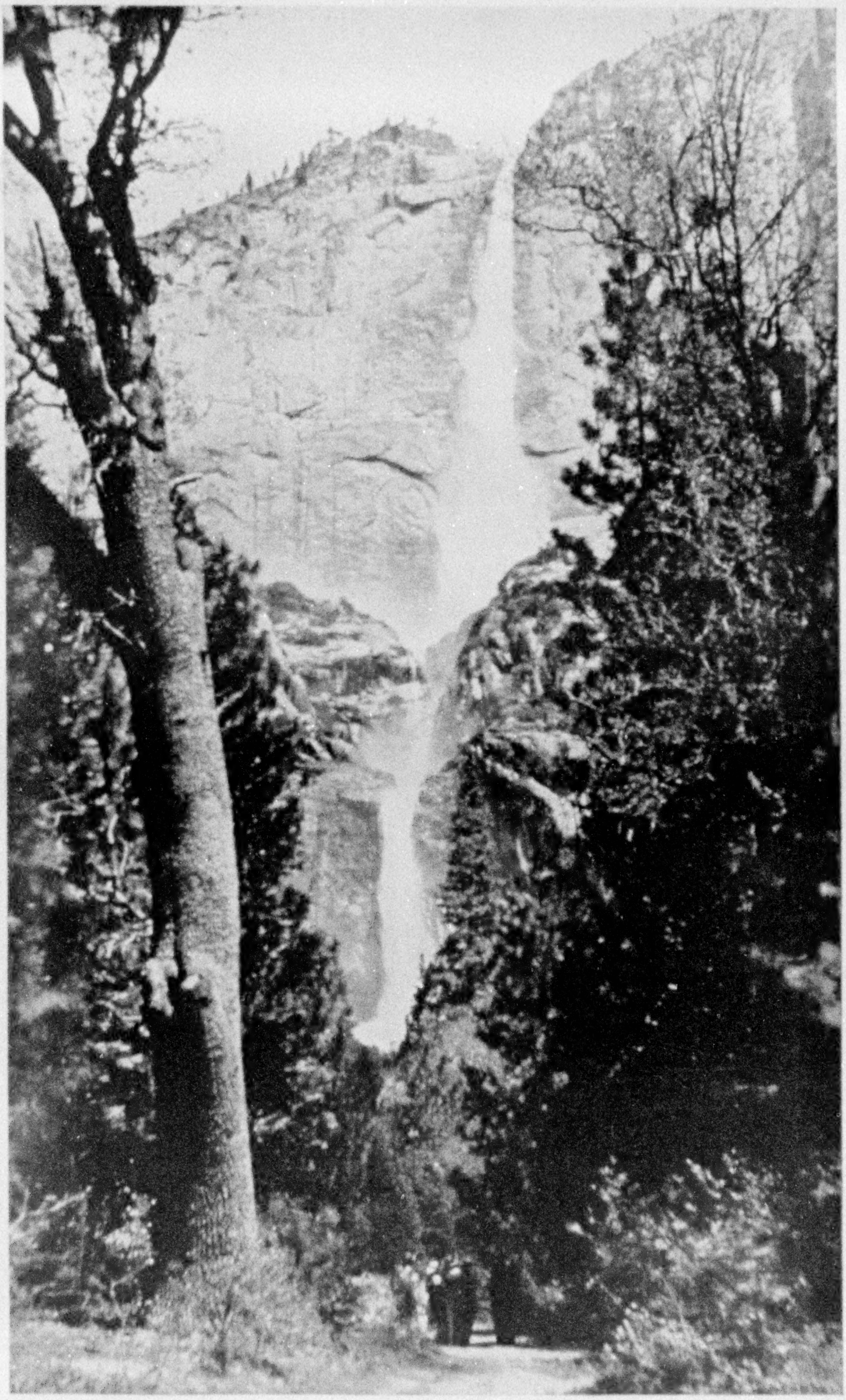


Photo by Lucie King Harris

YOSEMITE FALLS

The view of the great cataract from the Yosemite Falls Camp at its foot is one of surpassing beauty and never-to-be-forgotten delight. In its three flights—the first being a vertical leap of 1,400 feet, the second 600 feet, and the third 400 feet—Yosemite drops nearly half a mile, and at the point of its upper discharge is but 35 feet in width. Compared with Niagara's drop of but 170 feet, its lofty leap can be better appreciated.

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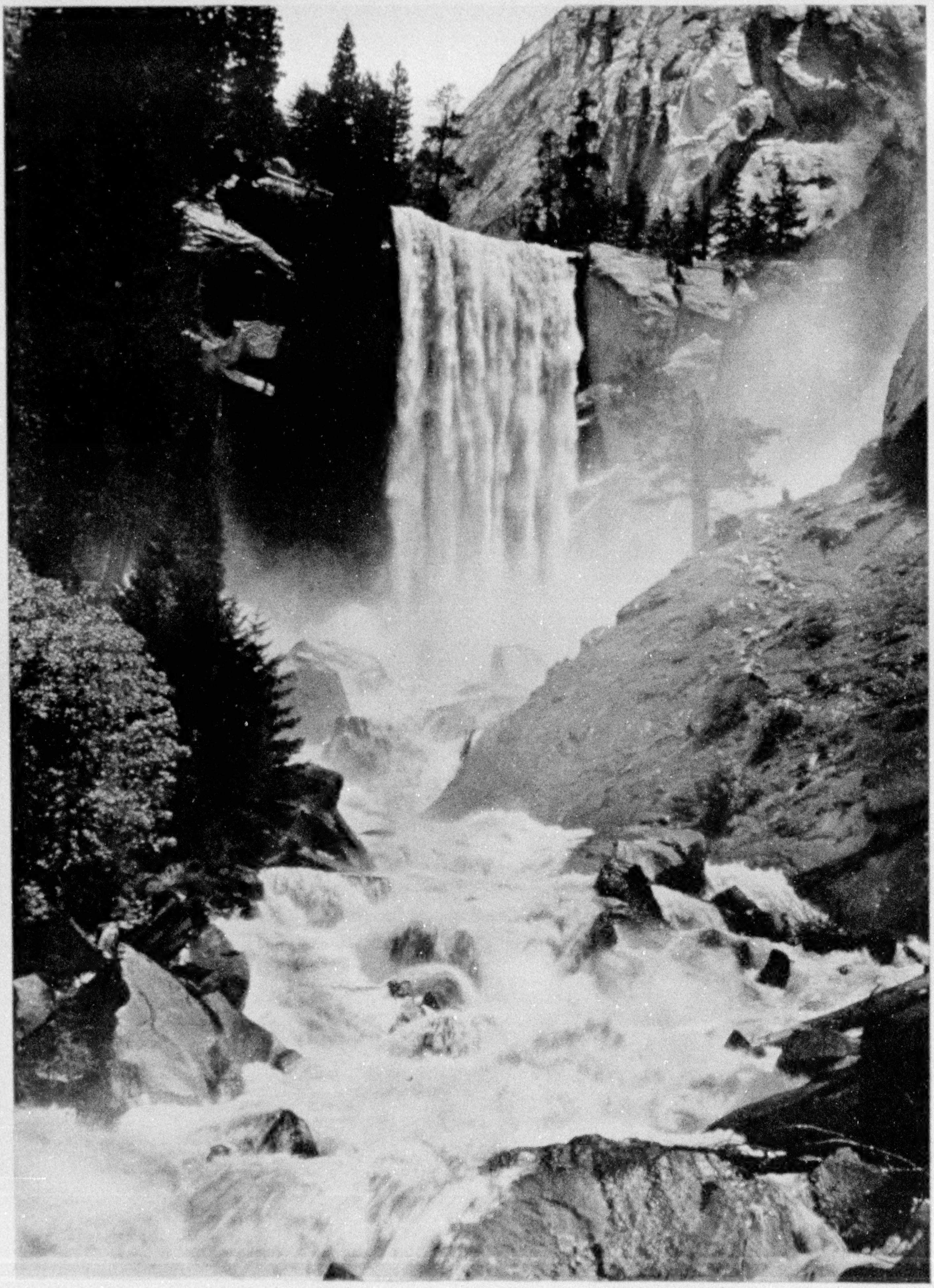


Photo by Harriet Chalmers Adams

VERNAL FALLS: YOSEMITE NATIONAL PARK, CALIFORNIA

"No temple made with hands can compare with the Yosemite. Every rock in its walls seems to glow with life. Some lean back in majestic repose; others absolutely sheer, or equally so, for thousands of feet, advance beyond their companions in thoughtful attitudes" (see text, page 67).

"Of its kind it is undoubtedly the most stupendous catastrophe in all history, and when that is said not the half is told. Now that the smoke pall is lifting, one looks over a ruin so vast and complete that the mind, refusing to grasp it for lack of contrast, registers an impression of the commonplace. When, after hours of wandering amid calcined brick piles one returns to Oakland across the bay, its flowers and gardens appear foreign and strange. San Francisco is a huge limekiln; its streets elevated causeways that run through charred and blackened cellars."

Compare that complete ruin with what one sees from the same viewpoint today: a larger, fairer, nobler city that lays her parks and squares, temples, skyscrapers, residences, a flexible mantle of brick and stone, across a dozen hills; add the Exposition, a work that cost over 50 million dollars, and you have a monument to the pluck and perseverance of the manhood of San Francisco such as will never be surpassed.

MANY SPIRITS BECOME ONE

It has been said of San Francisco that it is not a city, but a spirit. It might be added that this is the spirit of California, the indomitable spirit of '49 plus the best qualities of a dozen races added since—Spanish warmth of love and its ease, a Latin penchant for music and the arts, the imperturbability of the Orient, Scandinavian faithfulness, and so on—all these she has, a wonderful combination fused in a flame that cannot be quenched by adversity.

So varied is she in her likings, pleasures, and occupations that it is impossible to reduce even her essences to the limits of these paragraphs. Situated on a peninsula with towering hills, washed on three sides by the sea, her wants supplied by the most fruitful country on earth, it would be a matter of wonder if she were not something of a Hedonist.

Good-humored, kind, hospitable to the echo, your San Franciscan rather prefers to get all he can out of life now and take his chance with the hereafter. Something of a gourmand, he is quite universal in his tastes. The cooks of all lands cater to his needs and cater better than they ever did at home. In San Francisco you can eat a better French, Mexican, or Italian dinner, served at lower prices, with better service, than in Paris, Mexico City, or Rome.

The Latin blood, of which a generous strain now runs in its veins, calls insistently for music, and San Francisco was for a long time the only city in America where grand opera could run all the year round. The climate makes against reading. It takes a long winter to produce students. But if the San Franciscan leaves books largely to his wife and daughter, he is nevertheless thoroughly Grecian in his love of beauty and subscribes liberally to the arts.

THE CALIFORNIAN'S PHILOSOPHY

One might sum his liberal philosophy: to be a staunch friend, a good neighbor; to live well and broadly; to love beauty in all its forms. Nothing ascetic about it; nothing highfaluting, but broad and kindly, thoroughly Californian.

On his business side, the San Franciscan is equally broad. Though he no longer goes to business in a frock coat and stove-pipe hat, as in Bret Harte's day, he is still very much of an adventurer, ready to take a chance, whether it be salvage on a wreck, the financing of a South American revolution, or a "grubstake" for a prospector on a still hunt for a lost mine, and withal most sound in his business principles. It is in his blood; for he was born within sound of the Pacific, whose surf thunders of romance; he breathes the breath of the "trades" that sweep in from the isles of the southern seas. And examine his lineage! This old gentleman you meet on the street may be a bit tottering about the knees, but the frank, strong soul of him looks out of eyes that are clear, free, and fearless as those of "Tennessee" and his "bearded pards."

The latter genus, by the way, is not quite extinct. Sometimes in out-of-the-way places you will meet a specimen, beard white over his rough shirt, but hale and hearty; eyes bits of blue agate—free, fearless, innocent as of yore. If not recently converted to "oil," his talk still runs in "prospects," and calls up, as he runs along, vivid pictures of sun-struck canyons and sudden odors of sage and chaparral.

AH SING AND HIS DAUGHTER

He still looks with huge disfavor upon Ah Sing, flapping in loose cloth shoes along Chinatown's narrow alleys. In his time he gave poor Ah the devil's own time of it, hunting him with the same venom his grandson displays to the Jap.

Time, however, brings its surceases. The best of servants, most faithful of friends, a true gentleman in his quiet reservations, the Chinaman has won a permanent place in California's life. Forty thousand of him — save for the "tong wars," during which he practices race suicide with a hatchet—live at peace in San Francisco; also he has lived down the reputation for "tricks that are vain" foisted upon him by Bret Harte. His word passes everywhere for his bond.

His daughter, little Miss Ah, is a living proof of his complete patriation. That which it has done for little Miss San Francisco, developing her into the loveliest creature in all the world, the climate has also done for little Miss Ah. She is twice as tall and ten times as pretty as her sallow, short-footed slave mother. Slim and delicately colored by nature—helped out a bit, perhaps, by a rabbit's foot—she is to be seen any day in bevies of three or more, happy and free, full of giggles and chatter, lending the color of her blue, cerise, or mauve pantaloons to the duller costumes on Market Street. Yet so much has she become a part of San Francisco's life that none but a tenderfoot stares at her.

And that which climate has done for Miss Ah it is also doing for higher things, promoting greater loveliness in music, painting, sculpture, letters, all the arts. It is trite, now, to draw the parallel between California and ancient Greece, yet the causes which made the latter are already at work to develop in the former a like sensitiveness to the beautiful. The cold northlands were always the mother of great deeds. First in conquest, later in the inventions that make for material well-being, they led the world. But while their children were still chanting their boisterous sagas to the clashing of shields, the cadences of real song, rhythms of true poetry, were rising and falling in the southlands in harmony with the surge and recession of Mediterranean waves.

That climate is the mother of art, then, there can be no doubt. In a pleasant land, where neither tweaking cold nor enervating heat chill or enervate the mind, it will inevitably make its highest flights, and those ideal conditions which made the Mediterranean the cradle of the arts are duplicated in California. From the virile sowing of pioneer seed which, as under the breath of a mighty wind, was brought in from the four quarters of the world by the "gold rush" of '49, has already issued a crop of great writers and poets.

A LONG LIST OF AUTHORS

First, Joaquin Miller, Ina Coolbrith, Bret Harte, Charles Warren Stoddard, Edwin Markham, each celebrating in his or her own inimitable way the spread of desert or mountain, misty canyons, cathedral redwoods, oak-studded meads and riven valleys, bound in between the snow-capped Sierras and vast blue spread of the sea.

After them came a second crop—Frank Norris and Jack London, Mary Austin, George Sterling, John Fleming Wilson, James Hopper, Gertrude Atherton—and upon their heels now comes treading a greater host—poets, painters, writers, actors, playwrights, good craftsmen—all who would have stood out as notable figures in the less crowded fields of 20 years ago. And with such a beginning, what can be the end—but the creation of a second Greece?

The Exposition, with its warm color, great spaces, and huge masses rising from the ruins of a burned city, is at once a product and manifestation of this later Grecian spirit. Where else could its colorful beauty have been so perfectly at home, after granting the spirit to produce it? It is true that it has been called into existence only to serve the need of an hour; but that merely increases the wonder of it!

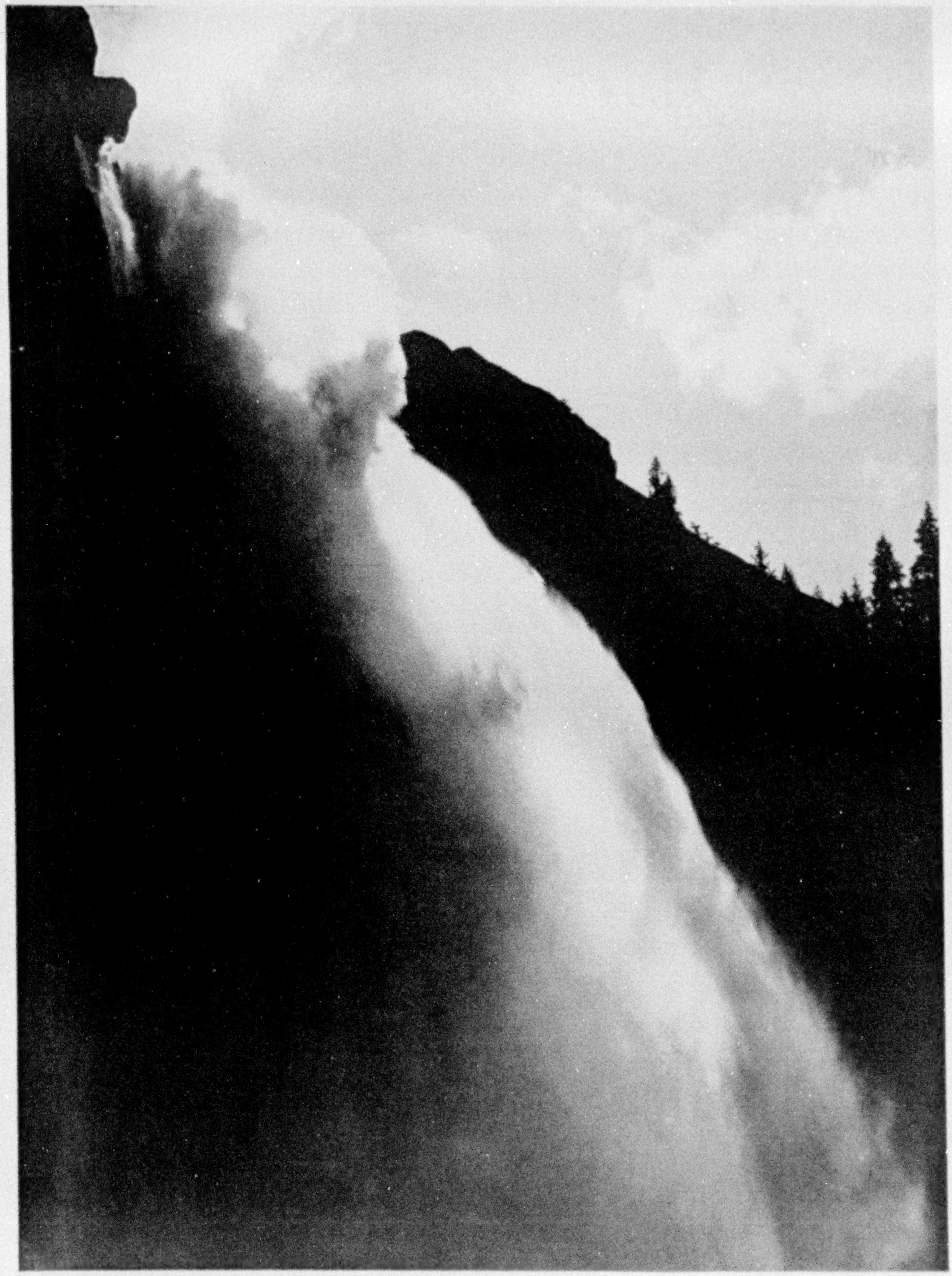


Photo by H. C. Tibbitts

"MAID OF THE MIST": NEVADA FALL, YOSEMITE VALLEY

"The Sierra Nevada range of mountains, from Mt. Whitney to Mt. Shasta, is replete with scenery such as people of all countries travel thousands of miles to visit. There are in this range of mountains the deepest canyons in the world, the oldest living thing in the world, the highest waterfalls in the world, the highest point of land in the United States, and in addition to all of these marvels and wonders the entire range is a riot of exquisite landscape beauty, wild flowers, forest glades, and Alpine lakes."

XUM

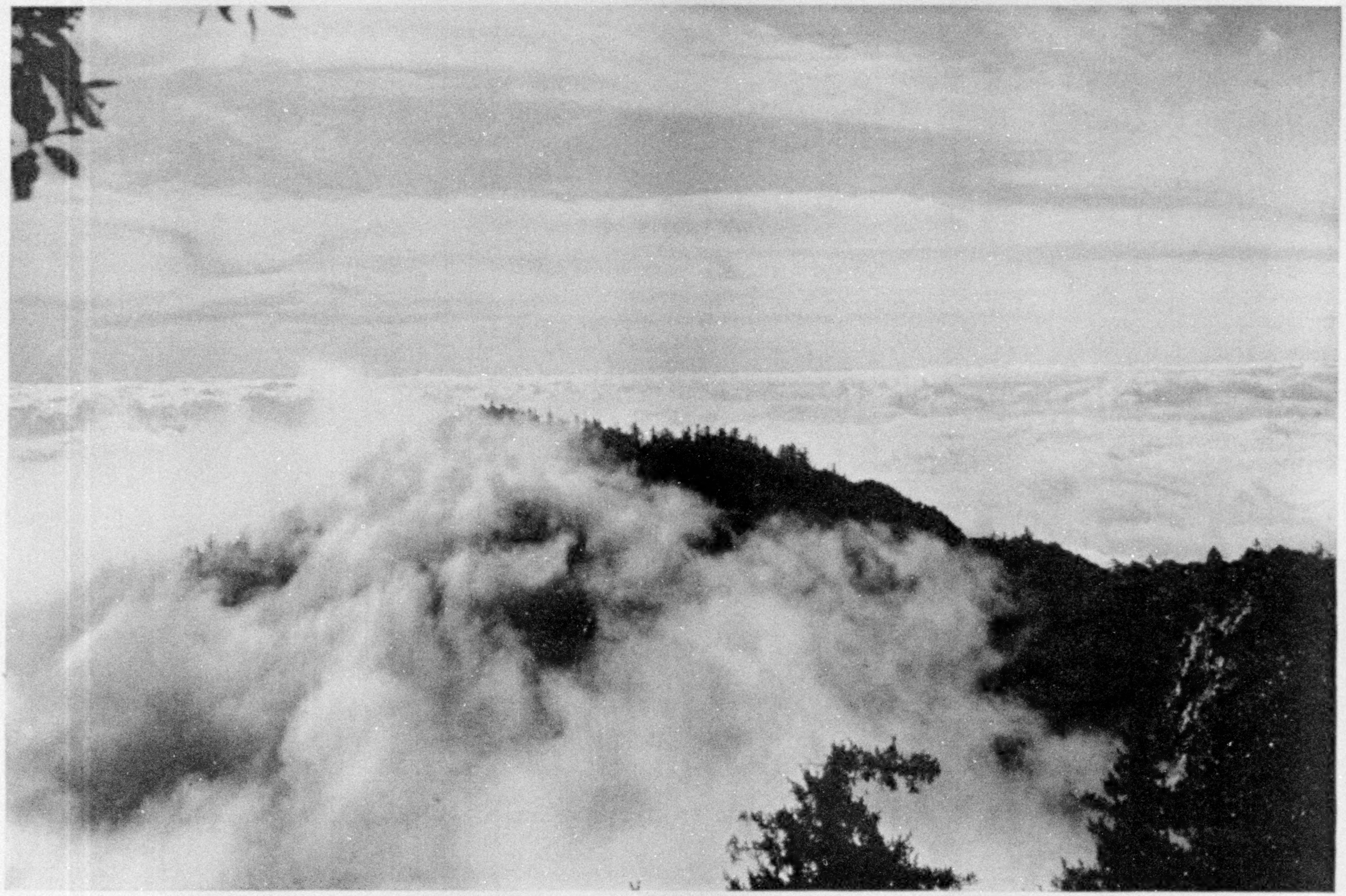


Photo by Prof. Ferdinand Ellerson

A SEA FOG IN CALIFORNIA

Nothing can be more magnificent or inspiring than to stand upon the summit of some mountain of the high Sierras and look out over a valley filled with fog; to see the vast rolling billows of mist resembling an ocean lashed to fury by a storm, below your feet, and the clear blue sky over your head; and sometimes even to behold the lightning and to hear the thunder's peal amid the clouds below. It is an experience that no one who has felt its thrill can forget.

XUM

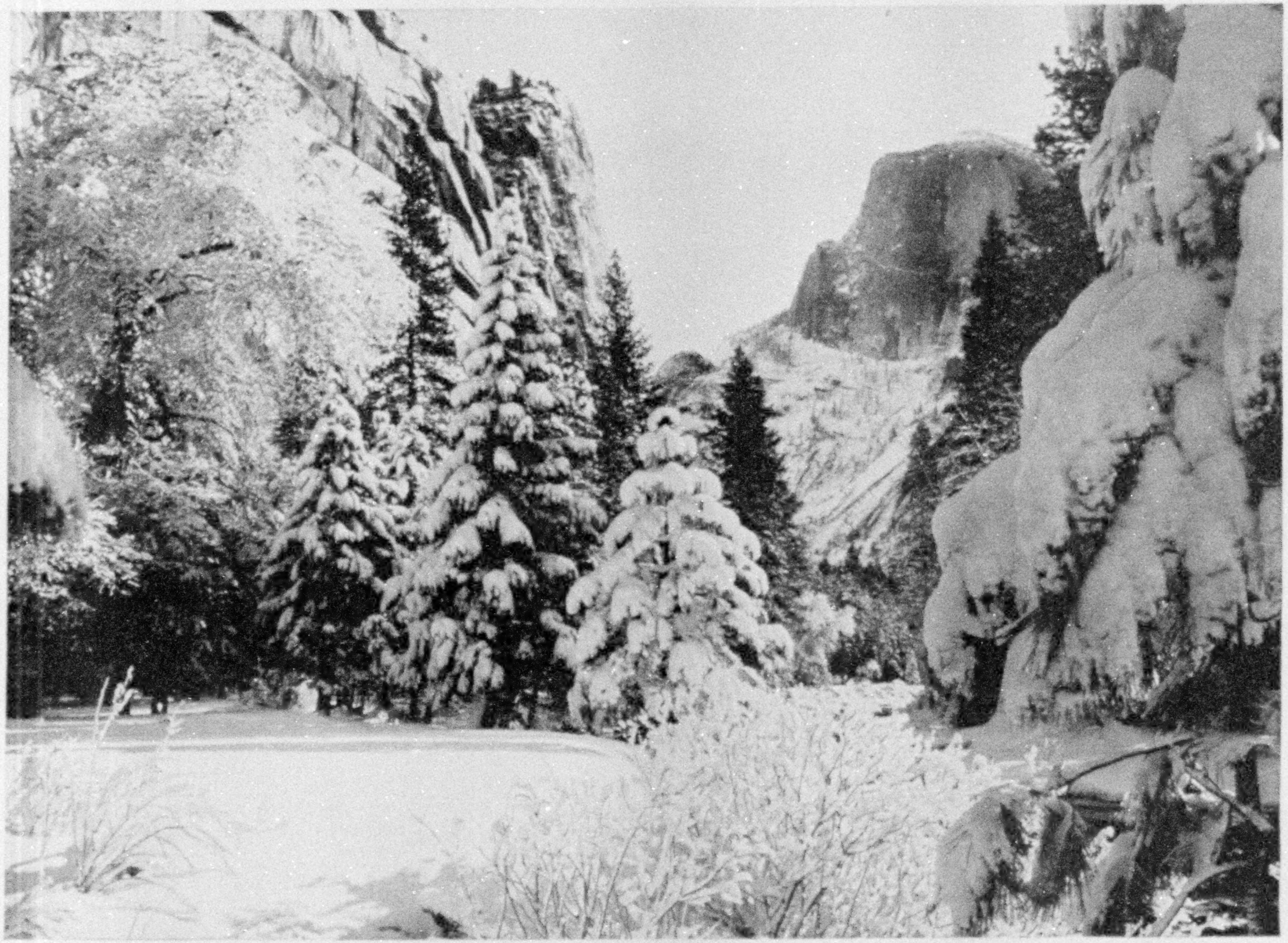


Photo by Pillsbury Picture Co.

ROYAL ARCHES AND HALF DOME: WINTER IN YOSEMITE VALLEY

"The Yosemite National Park has been justly called the incomparable. It was set aside October 3, 1890, and contains three-quarters of a million acres. No equal area in the world possesses so many wonders of Nature, so many magnificent scenes, or such glorious growth of flowers and forest trees."

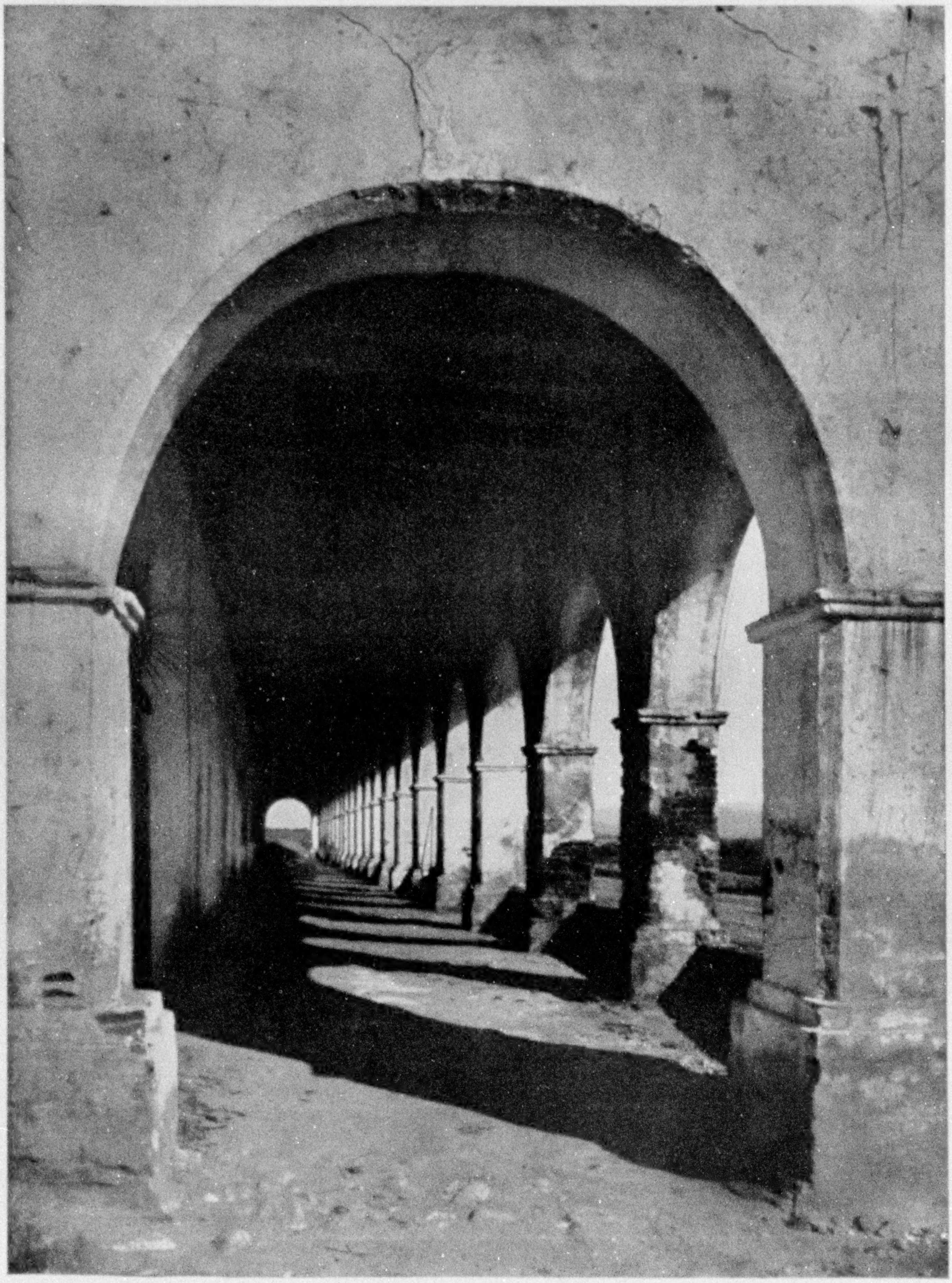


Photo by Pillsbury Picture Co.

ARCHWAY: SAN FERNANDO MISSION

"Of La Purisima Concepcion there remains little more than a ruined cloister rising amidst the long grass and oaks of a hill-bound plain; but its close neighbors, San Buenaventura and Santa Barbara, are almost as good as new. Matins and vespers are still intoned in their dim chapels. You may see the soft-eyed padres walking and talking in their pleasant garden, or watch the lay brothers swinging hoe and shovel at their daily tasks" (see text, page 59).

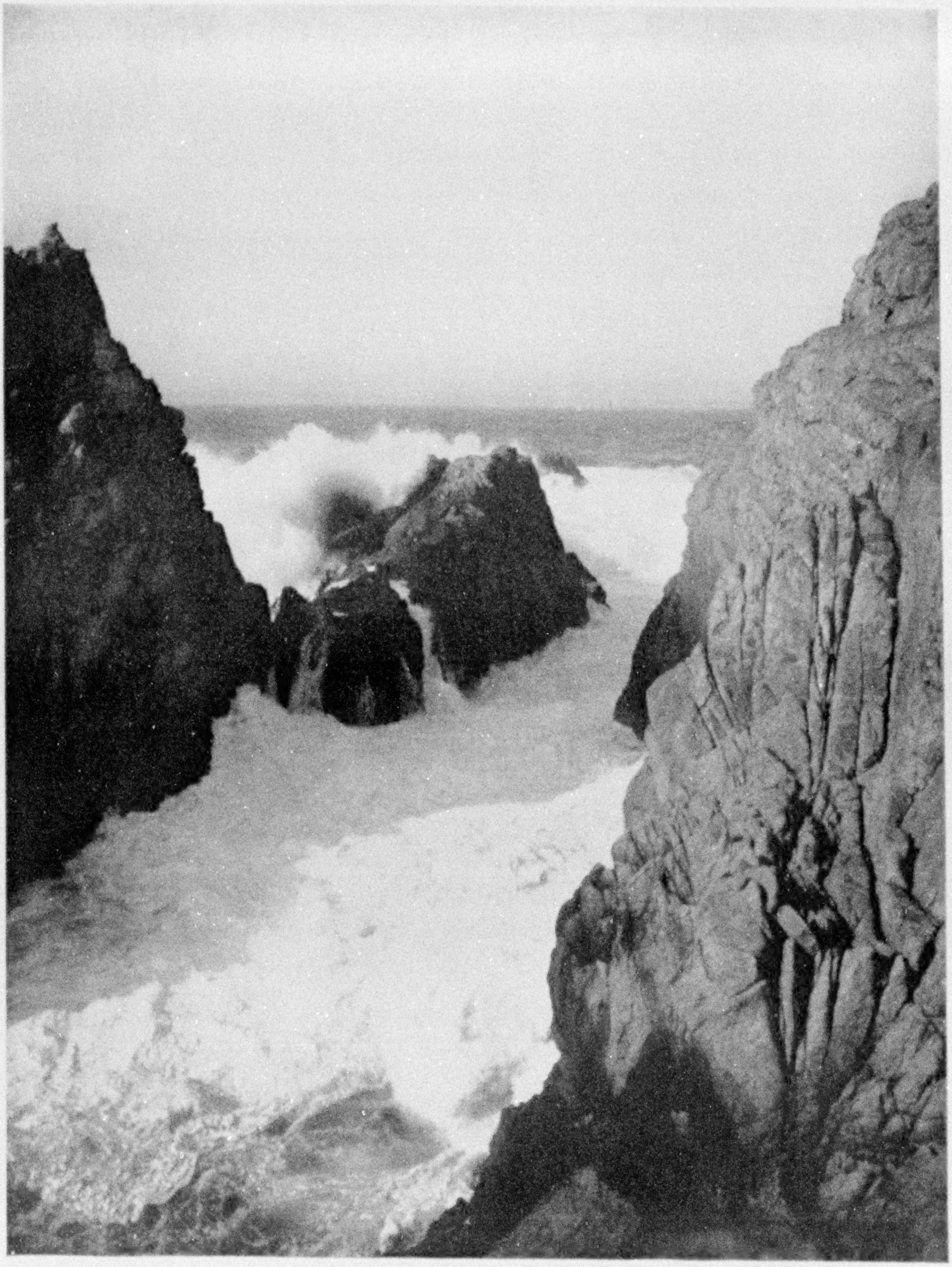


Photo by Pillsbury Picture Co.

WAVES AND ROCKS: POINT LOBOS, MONTEREY

Californians have christened their State "The Playground of the World," and whoever goes there comes away feeling that civic pride has not overpainted the picture. Rugged seacoast, delightful beach, Eden-like valley, snow-capped mountain, desert-afflicted plain, pellucid lake, roaring cataract, the tallest tree, the sweetest flower—what can there be that California does not offer?

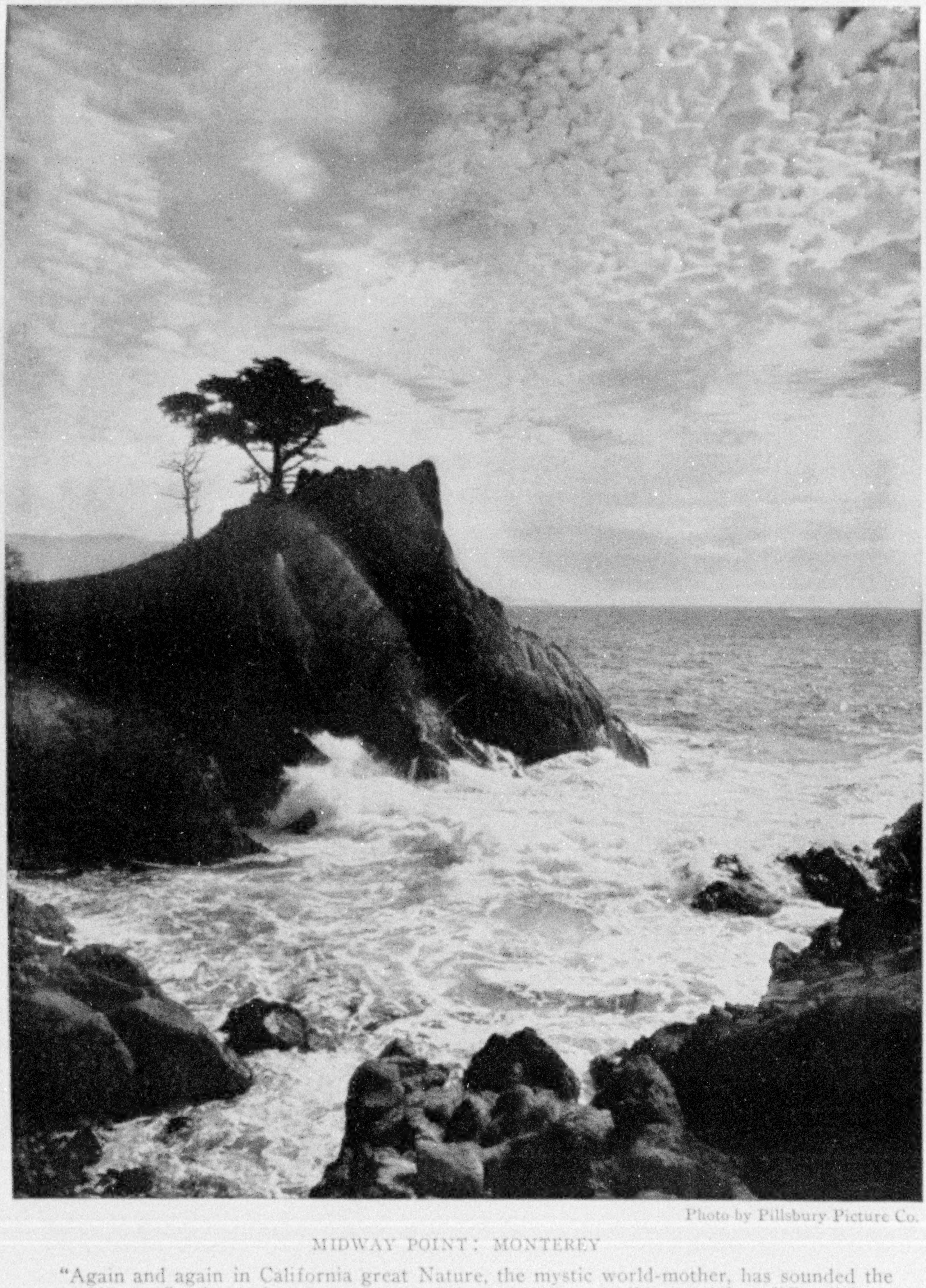


Photo by Pillsbury Picture Co.

MIDWAY POINT: MONTEREY

"Again and again in California great Nature, the mystic world-mother, has sounded the note sublime. Seashore, desert, mountain, giant tree, strange valley, towering cliff—all have been staged for a world spectacle, a drama of magnificence."—EDWIN MARKHAM.

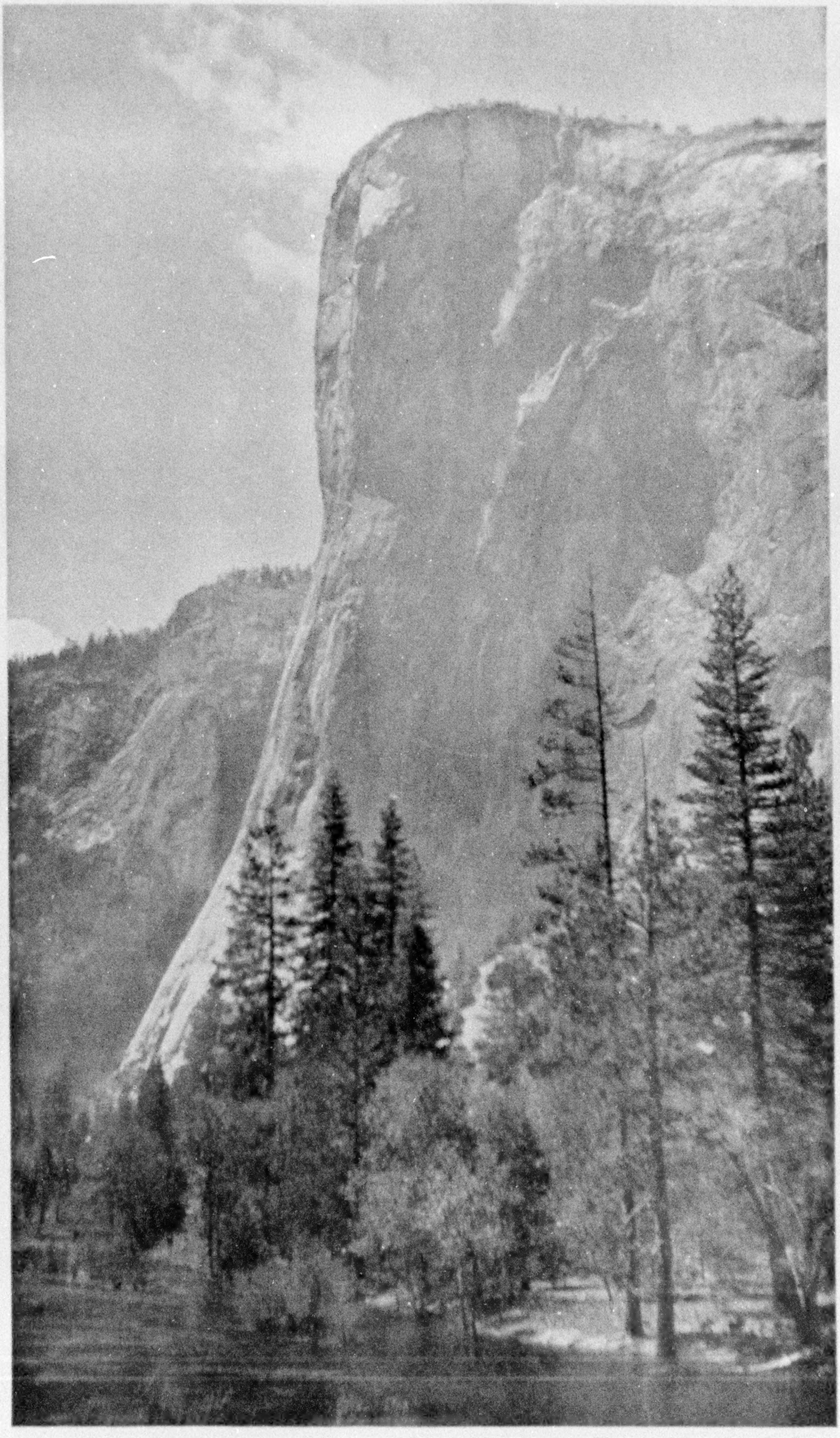


Photo by John Oliver La Gorce

EL CAPITAN: "THE ROCK OF AGES"

Known the world over, this mountain of granite, with its sheer face of 3,000 feet, has withstood the warring elements since the Ice Age because of its exceptional solidity

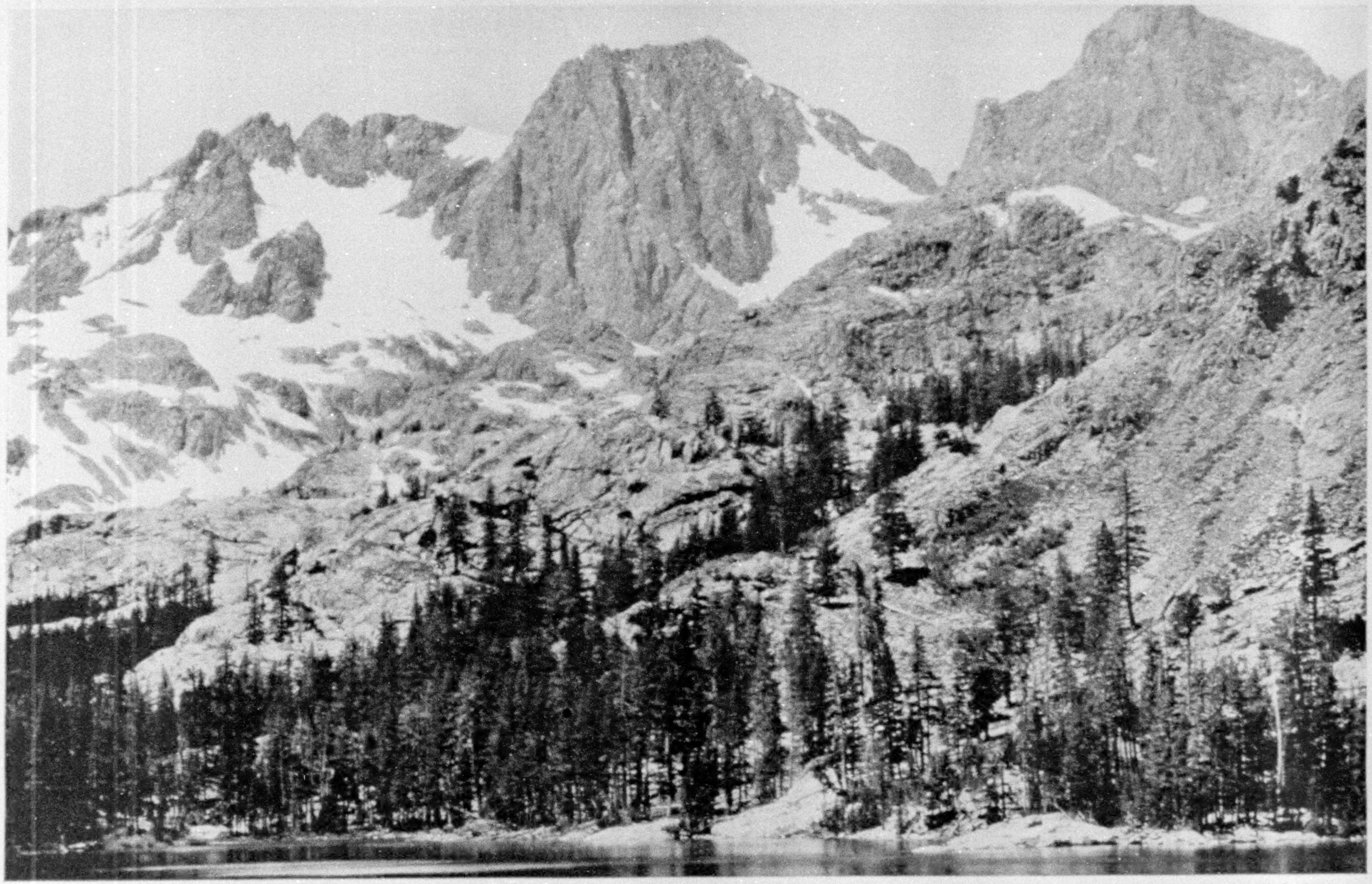


Photo by W. L. Huber

SIERRA NEVADA MOUNTAINS, NEAR DEVIL'S POST PILE NATIONAL MONUMENT: CALIFORNIA

From Mt. San Jacinto to Mt. Shasta, the California Sierra Nevadas cover 600 miles, their frozen summits towering to heights of 15,000 feet. Mt. Ritter (center), 13,156 feet; Banner Peak (right), 12,957 feet

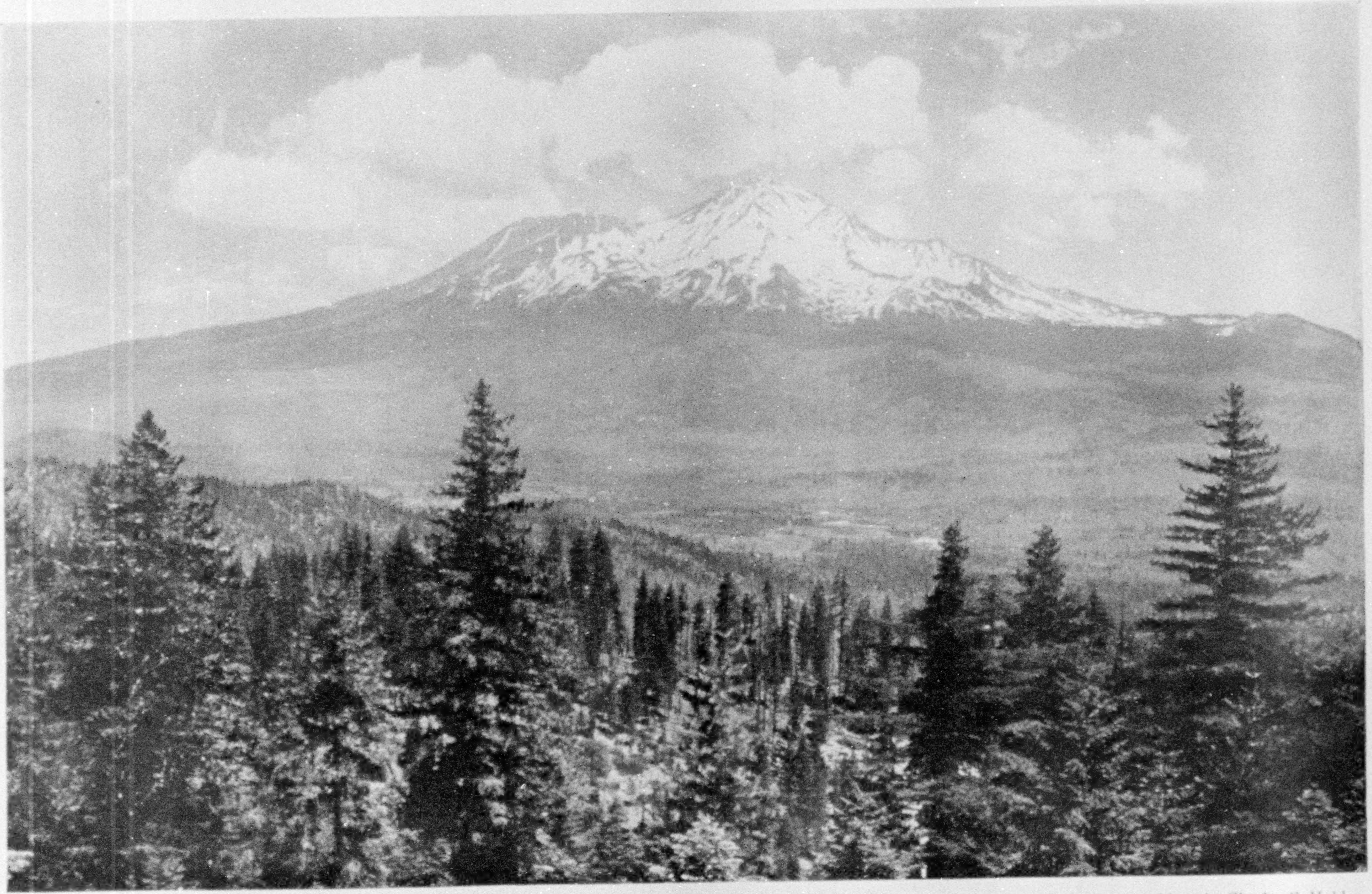


Photo by Charles F. Holder

MT. SHASTA: CALIFORNIA

This culminating crown of the united Coast and Sierra Ranges marked for generations the boundary line between the French possessions on the north and the Spanish on the south. According to Indian legend, the Creator made Mt. Shasta the first of all the mountains, as His masterpiece, with which, as a model, He designed the other mountains of the world.

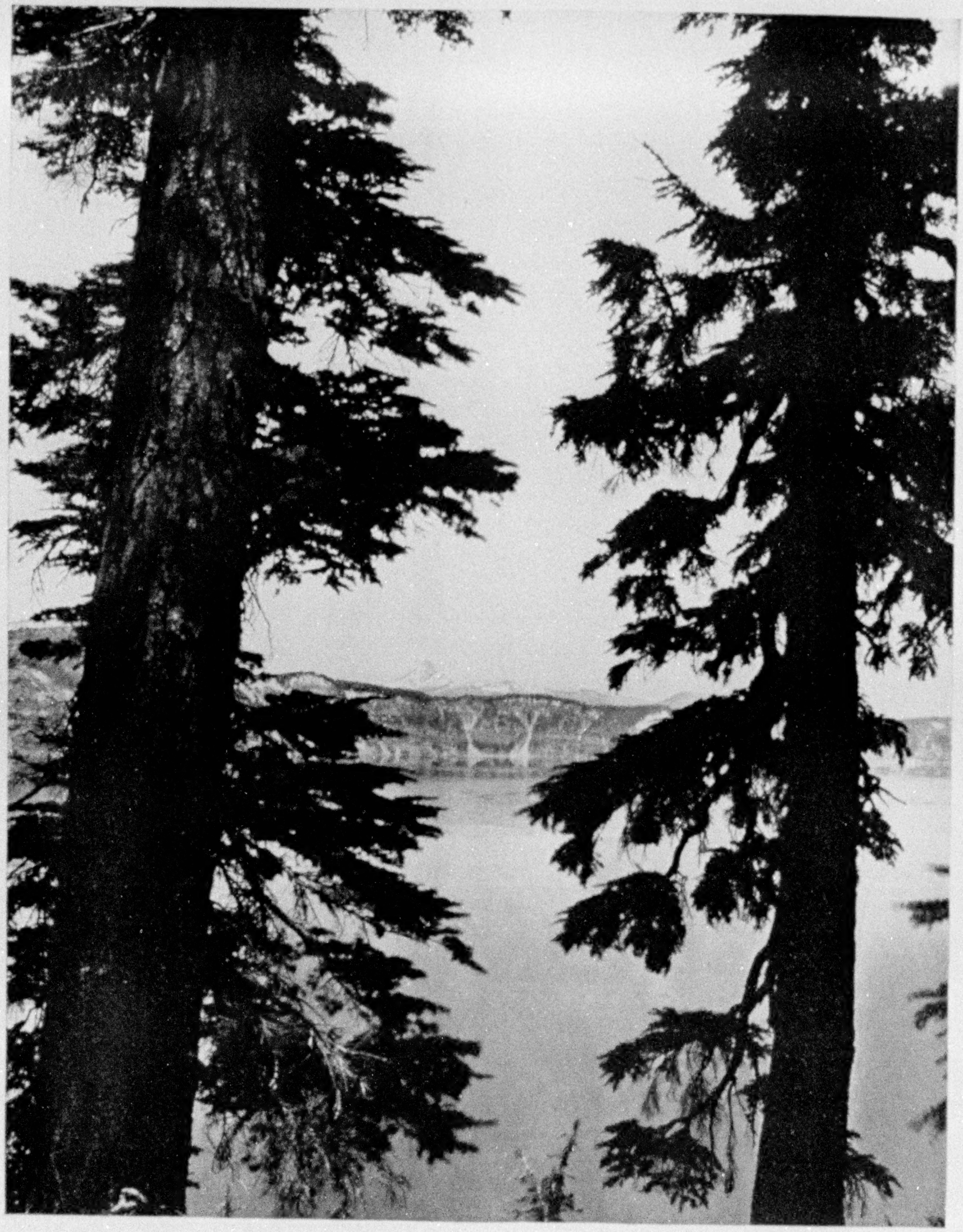


Photo by George R. King

A GLIMPSE THROUGH TREES: CRATER LAKE NATIONAL PARK, OREGON

Lying crystal-cold in a basin formed by a partly destroyed volcano, Crater Lake, 6,200 feet above the sea, completely surrounded by a varying line of cliffs between 500 and 2,000 feet in height, is a chief gem in the crown of the Cascade Mountains. The lake is about 20 miles in circumference, and the wild freshness of its nature makes it a peer of those Alpine lakes whose names and fame have traveled so widely through the world—better advertised, but not more fascinating.

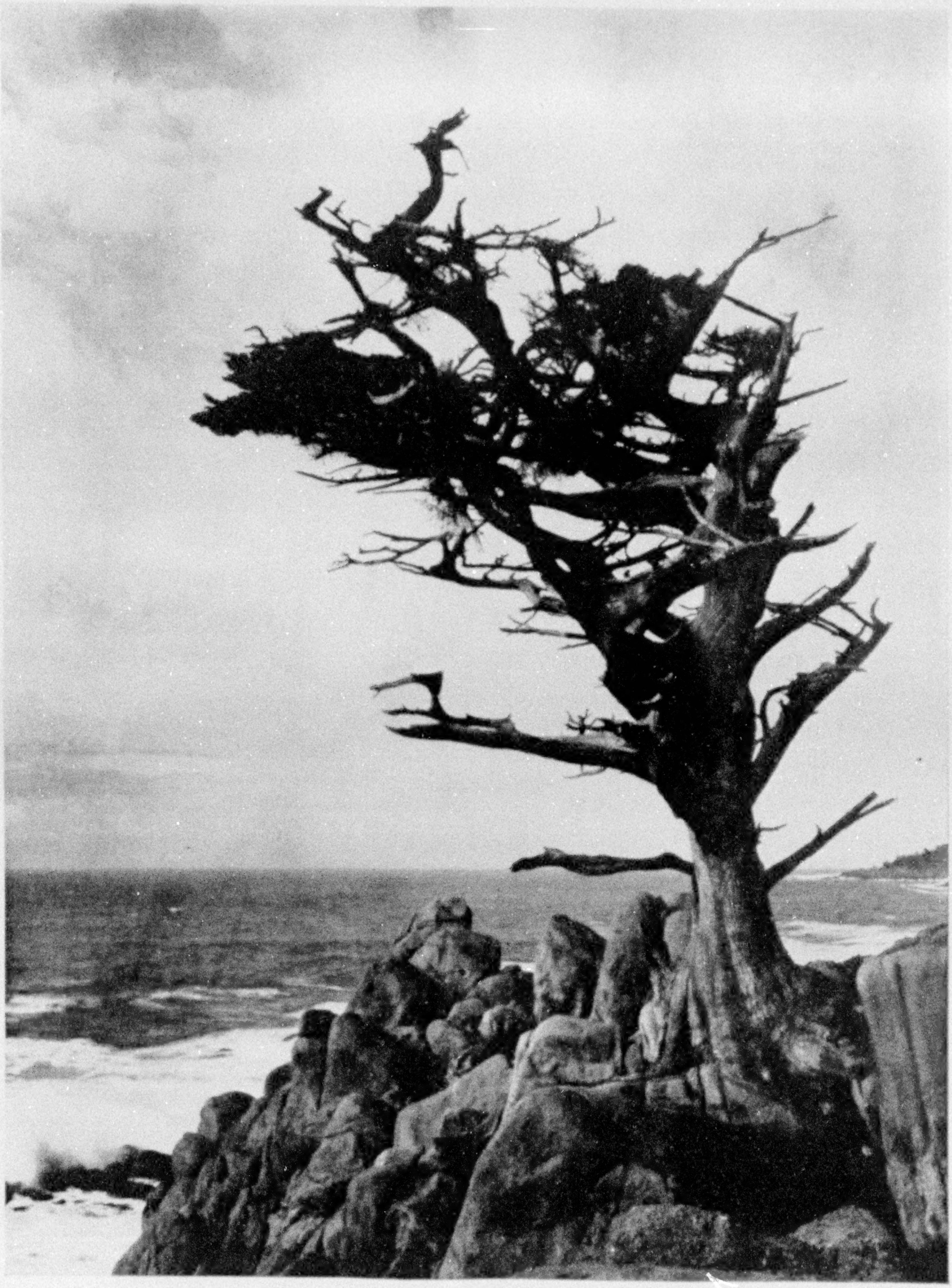


Photo by Pillsbury Picture Co.

THE SENTINEL CYPRESS TREE: MONTEREY, CALIFORNIA

Clinging, a lone outpost, upon its headland perch of weather-riven rock, this melancholy cypress wreck has stood its watch, perhaps, for more than 2,000 years, buffeted without mercy by the rough Pacific blasts that have swept its bare abode unchecked and tormented it into a strange, gnarled shape. These cypress trees along the Californian coast are the last of their kind to find a foothold on our continent, for they fringe the line which just divides the surf and land.

XUM

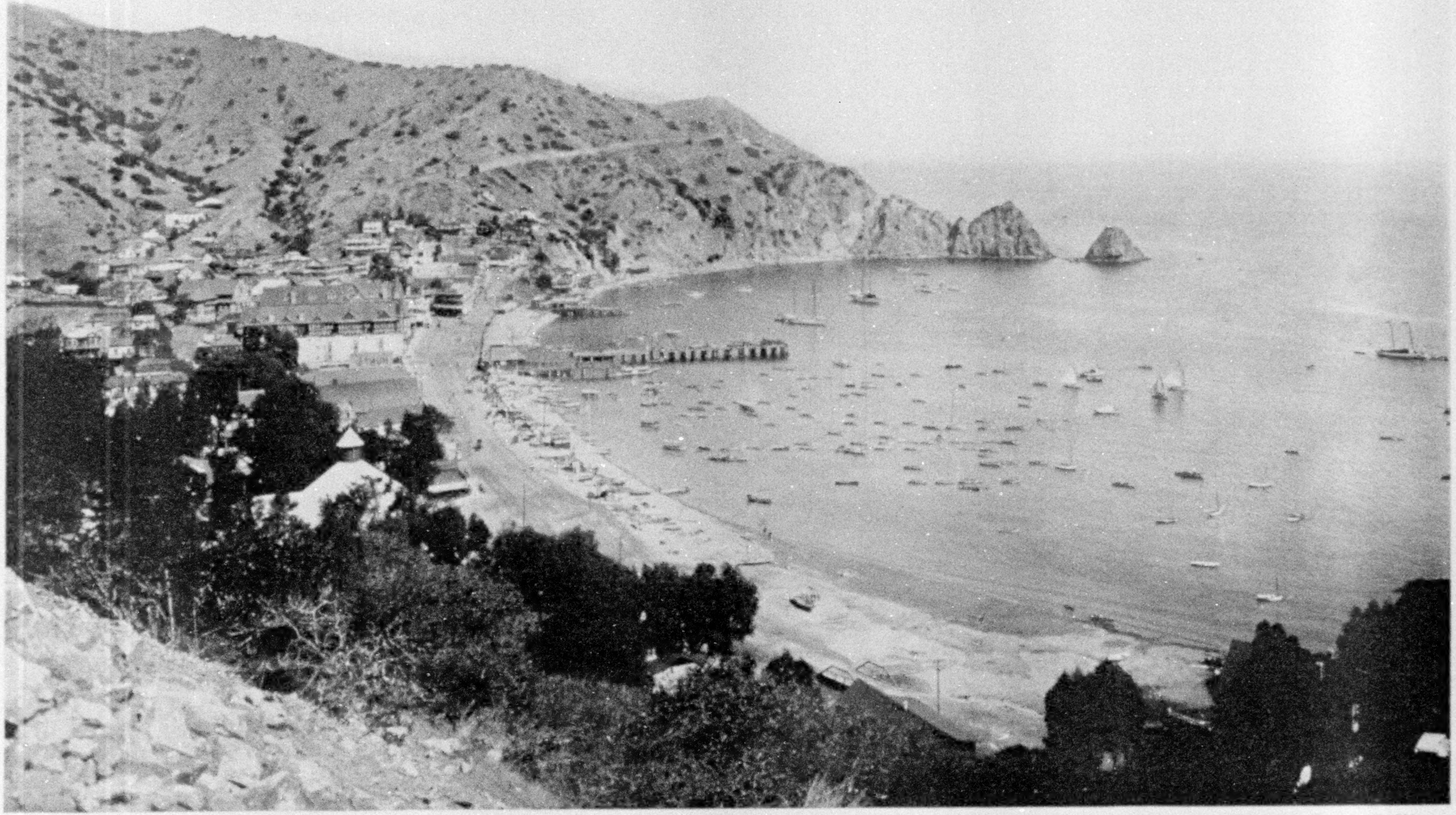
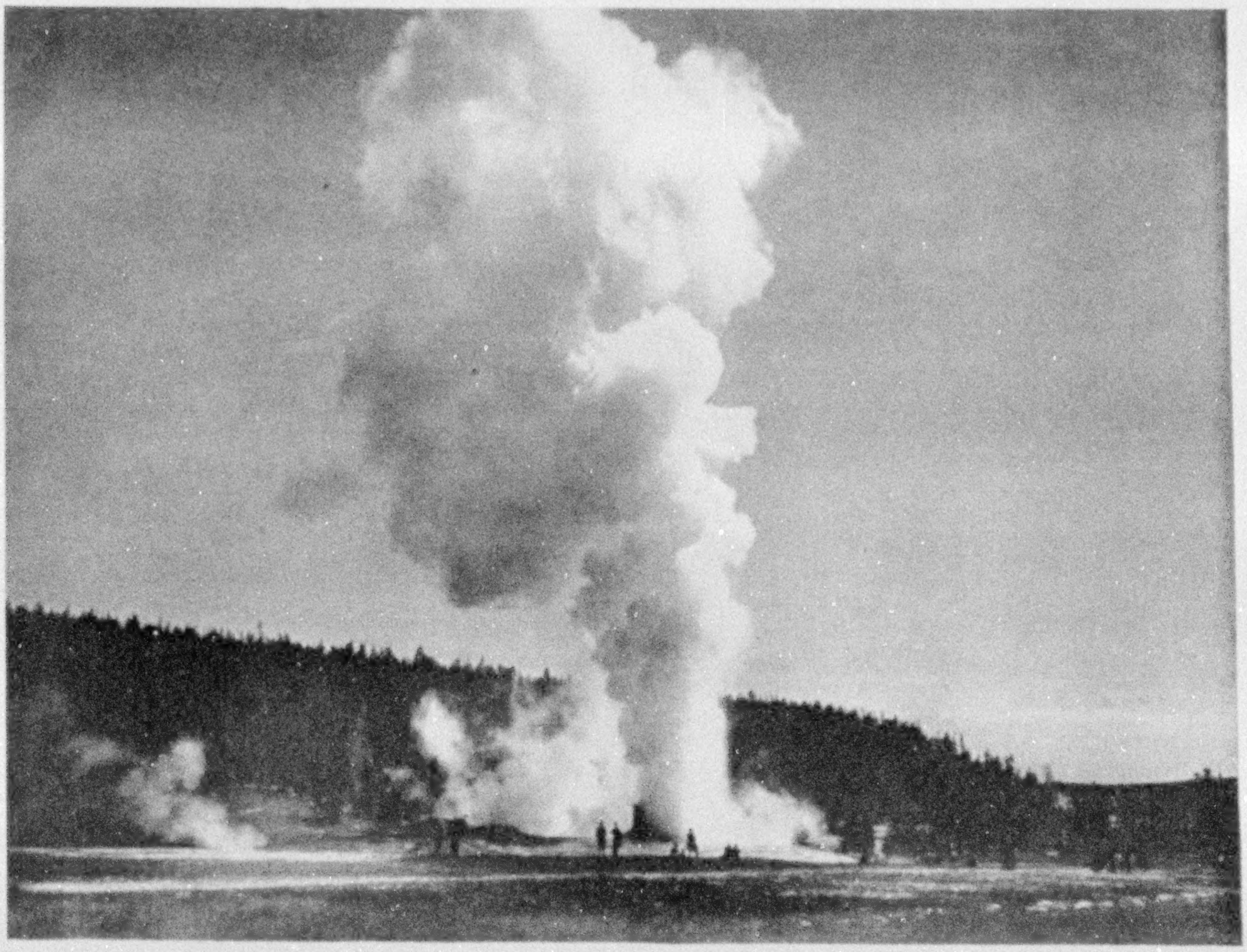


Photo by George R. King

AVALON HARBOR: CATALINA ISLAND, CALIFORNIA

Catalina is a mountain range surrendered to the sea. Avalon harbor, its chief beauty, crescent-shaped, is a place of pilgrimage for some of the most famous anglers of America, Great Britain, and France. Tuna, black sea bass, white sea bass, and swordfish are taken in the clear, unruffled waters of its blue bay, and the mounting of trophy fish for the fishermen pilgrims has become an Avalon industry. The rich submarine gardens of Avalon Bay are famed, and so transparent are the waters that these sea landscapes may be studied in detail by the use of glass-bottom boats.



GIANT GEYSER: YELLOWSTONE NATIONAL PARK Photo by Haynes

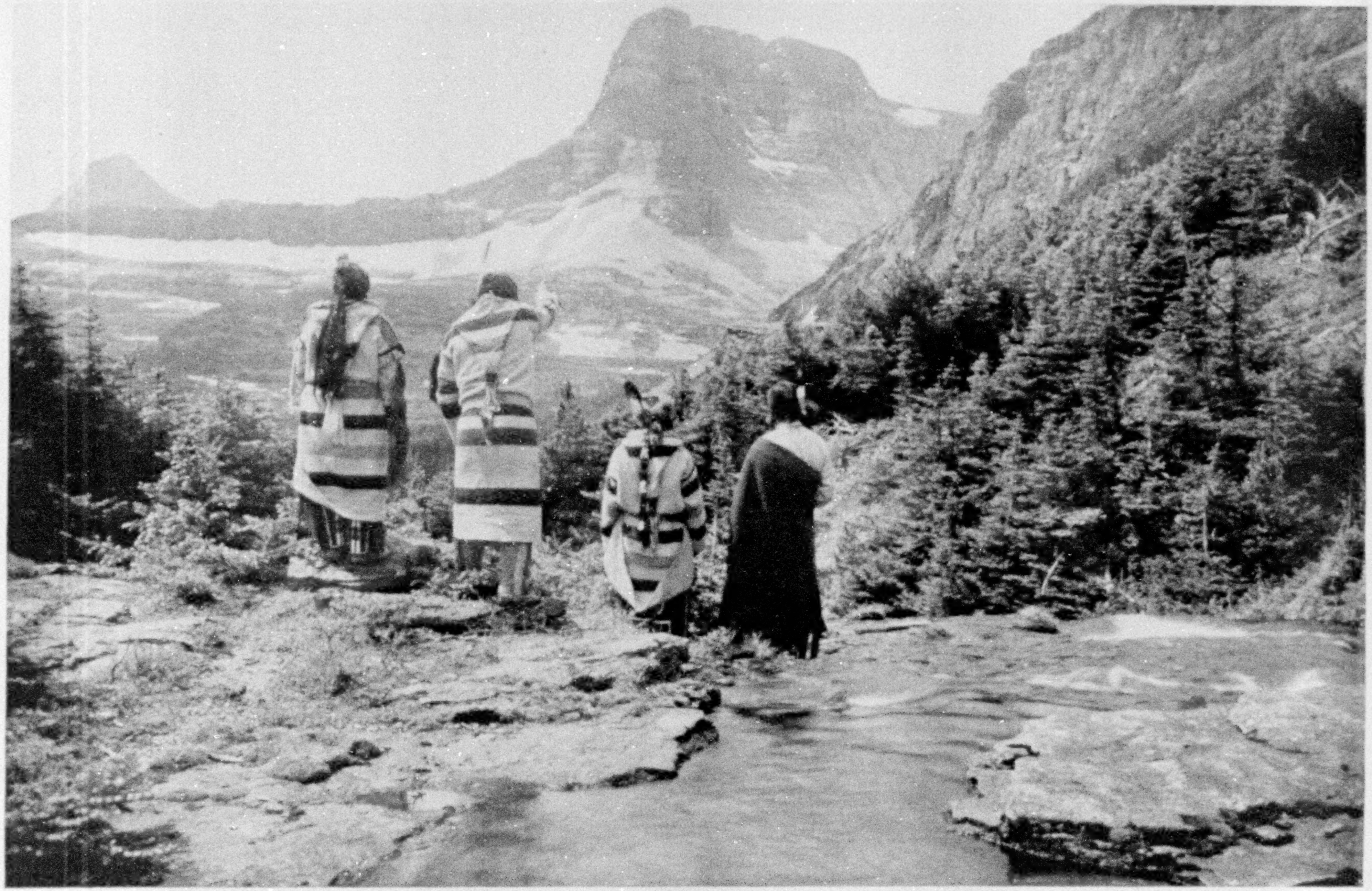
Of the 84 geysers in Yellowstone National Park, no two are alike in their characteristics. The Constant Geyser sends forth graceful jets of water to a height of 20 feet once a minute. Giant Geyser discharges only once in from five to seven days. Old Faithful, however, is so regular that it might be called the clock of the subterranean world. In the 40-odd years that it has been known to the white man it has never "missed fire" once, the interval being 65 minutes.

A NOBLER DESTINY FORETOLD

And the lesson it furnishes will not be lost. When California shall have achieved her commercial destinies, it requires no prophet to foretell that this "City Beautiful" — far more beautiful than the city of Joaquin Miller's dream — will have a hundred counterparts in bronze and stone. At present, while garnering within its walls California's choicest products, its fruits and wines, grains of her upland farms, gold from her rich canyons, it may be held to represent the California spirit, the free, manly, generous spirit that gives its best without taking thought.

No one can do justice to the glories of California who forgets that other little land of wonder and region of marvel, the Panama-California Exposition at San Diego. If the Panama-Pacific bewilders, dazzles, and drives to speechless wonder and admiration every one whose great and good fortune it is to look upon it, the Panama-California charms, soothes, and gently delights its visitor. The one is the magnificent sunburst of diamonds, the other a splendid cluster of pearls, each with a beauty, an atmosphere, and a coloring all its own.

With its transplantation of all that is best in Latin-American architecture; with its wonderful collection of tropical flora, gathered from every point of the tropical compass; with its Montezuma Garden, its Painted Desert, its great tea plantation, its model intensive farm, and its working model of the Panama Canal, it is a little fairyland where fairies teach Pan-American history, Pan-American ideals, Pan-American possibilities by delighting the eye rather than by the old, slow, and painful method of hard study of our school days.



Courtesy of the Great Northern Railroad

BLACKFEET POINTING TO MT. WILBUR, PTARMIGAN LAKE: GLACIER NATIONAL PARK

This region has been called the roof of North America. In its mountains are eighty living glaciers. From their heights the waters divide and flow into the Gulf of Mexico, Hudson Bay, and the Pacific Ocean. Within the park are 250 glacier-fed blue mountain lakes and scores of silvery streams.

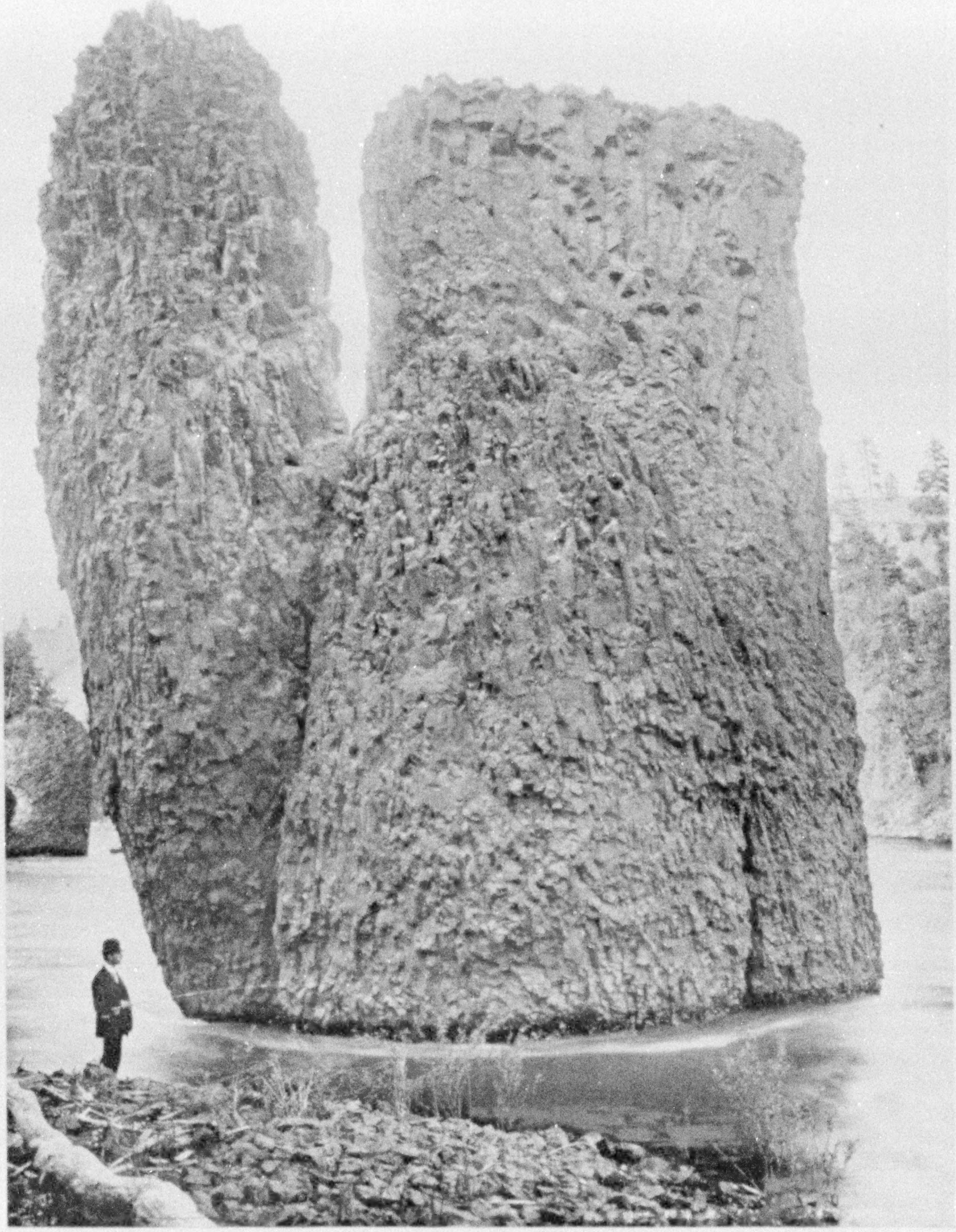
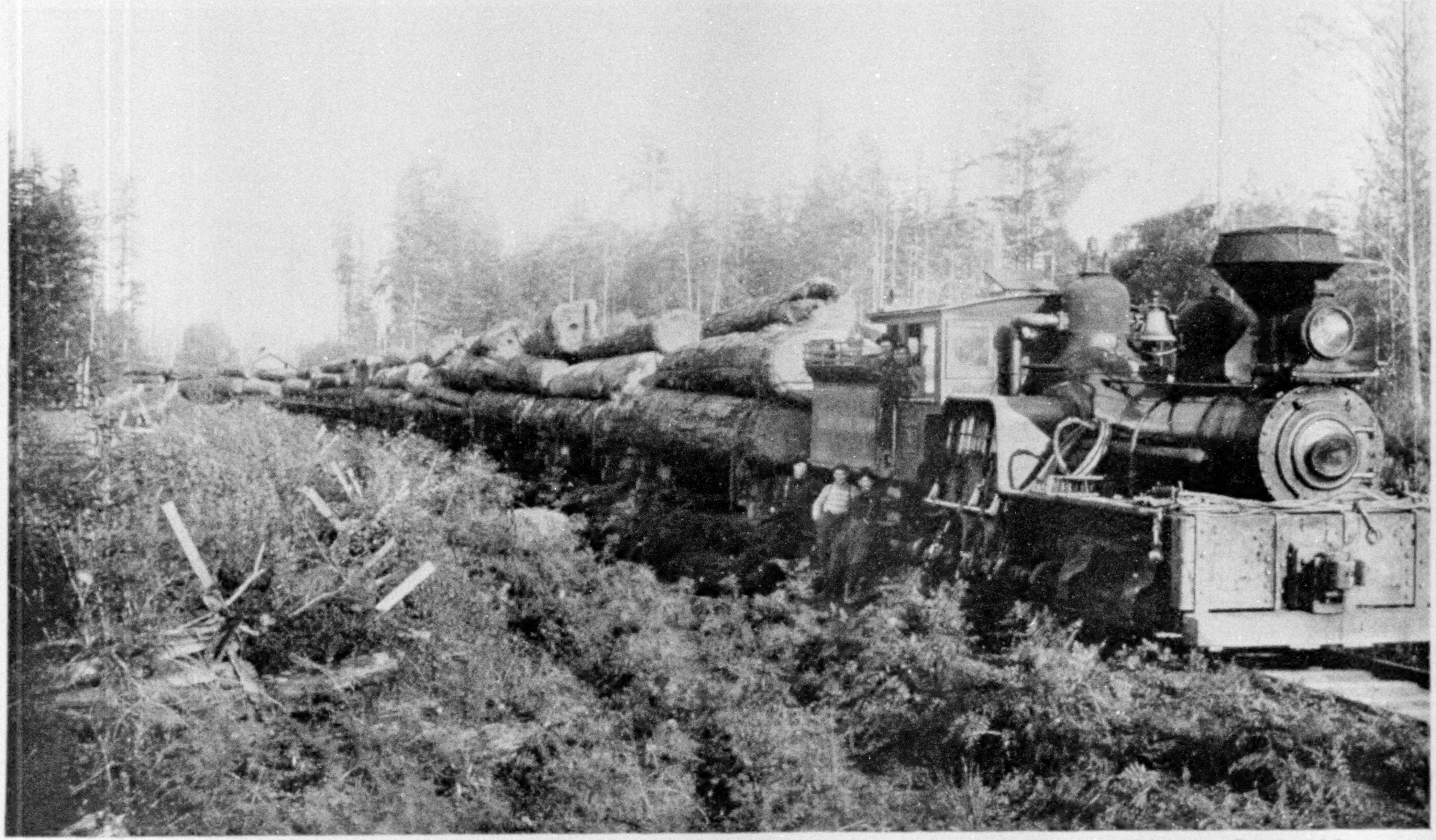


Photo by Frank Palmer

THE DEVIL'S TEAPOT; SPOKANE RIVER, WASHINGTON

A basaltic rock formation at the Bowl and Pitcher Falls in the Spokane River, four miles from the heart of the business section of Spokane. Spokane has the unique distinction of having two waterfalls within the city limits, their combined height being 150 feet. They have been harnessed to Spokane's industries and afford cheap light and power for the hustling capital of the Inland Empire.

XUM



Courtesy of Bellingham Chamber of Commerce

LOGGING TRAIN: PUGET SOUND

Ranking second among the States of the Union in the value of her timber resources, Washington has 391 billion board feet still on the stump. Oregon, with its 545 billion board feet, combined with Washington, constitutes one of the greatest, if not indeed the greatest, timber region in the world.

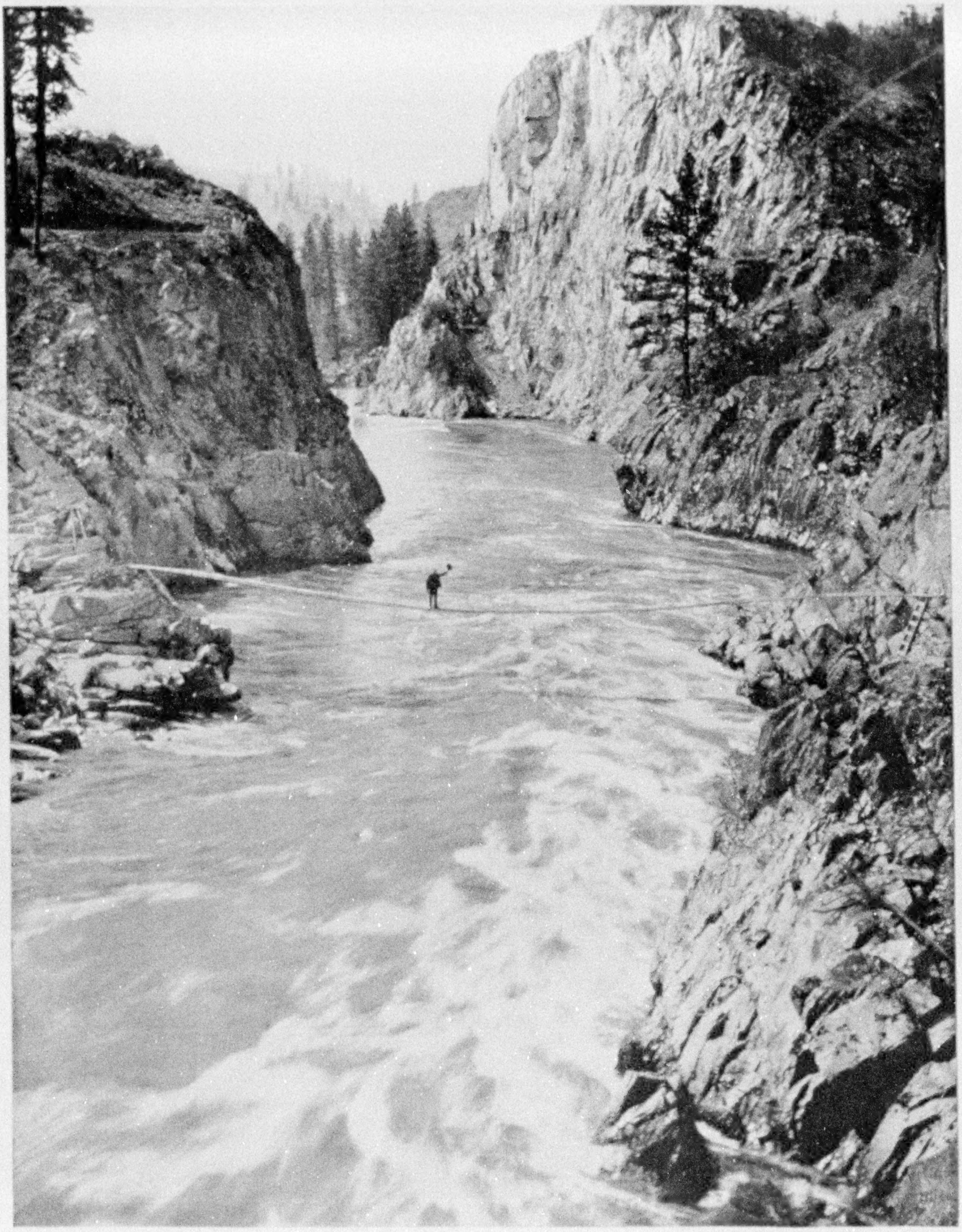
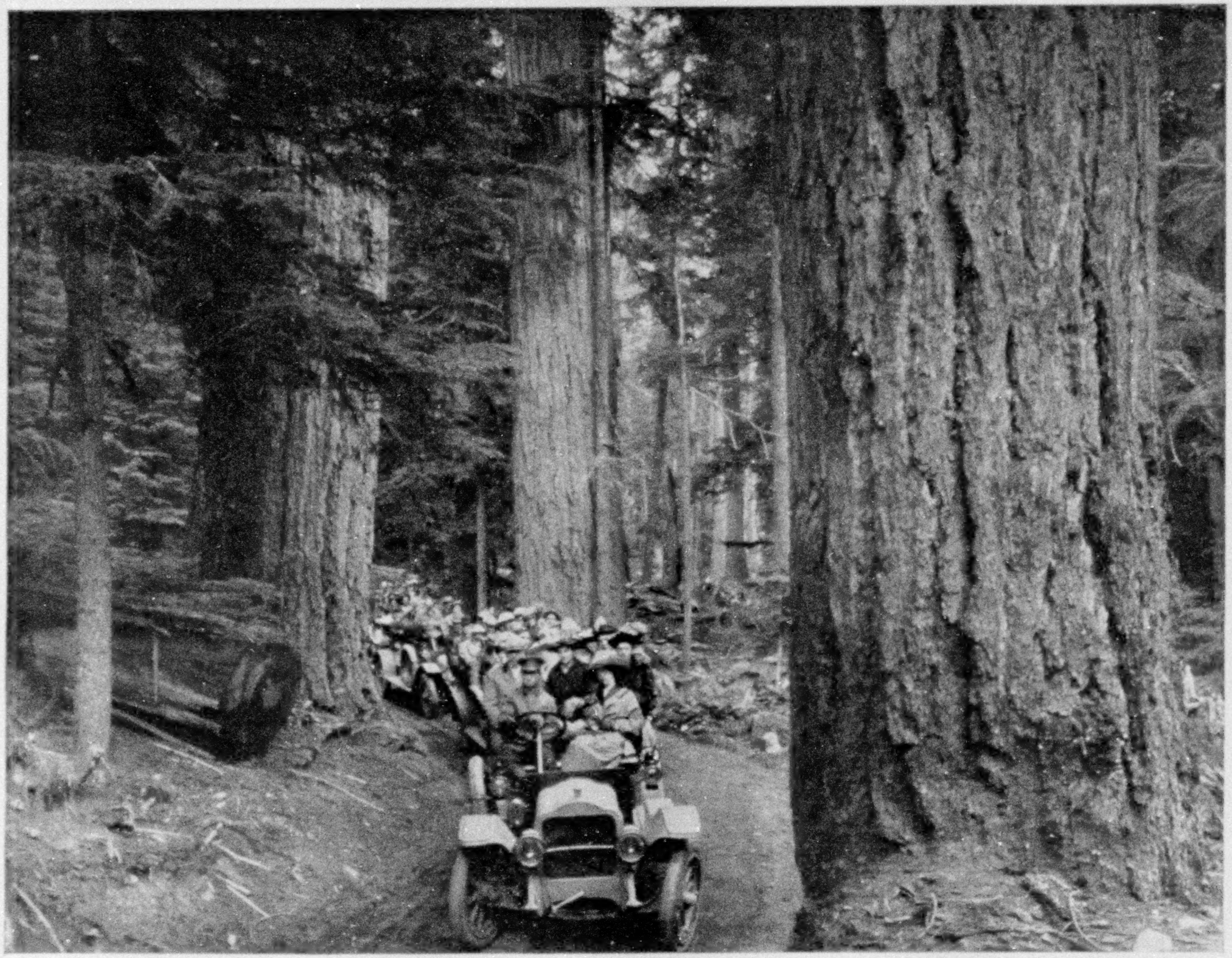


Photo by Frank Palmer

THE NARROWS, SPOKANE RIVER, NEAR THE CONFLUENCE OF THAT STREAM WITH THE COLUMBIA

The suspension bridge here seen was built for the use of the Indians, who cross from the reservation to the Indian school established on the site of old Fort Spokane. Below the confluence of the two rivers lies the "Great Plain of the Columbia," shut in on all sides by mountains, one of the most important wheat fields in the world.

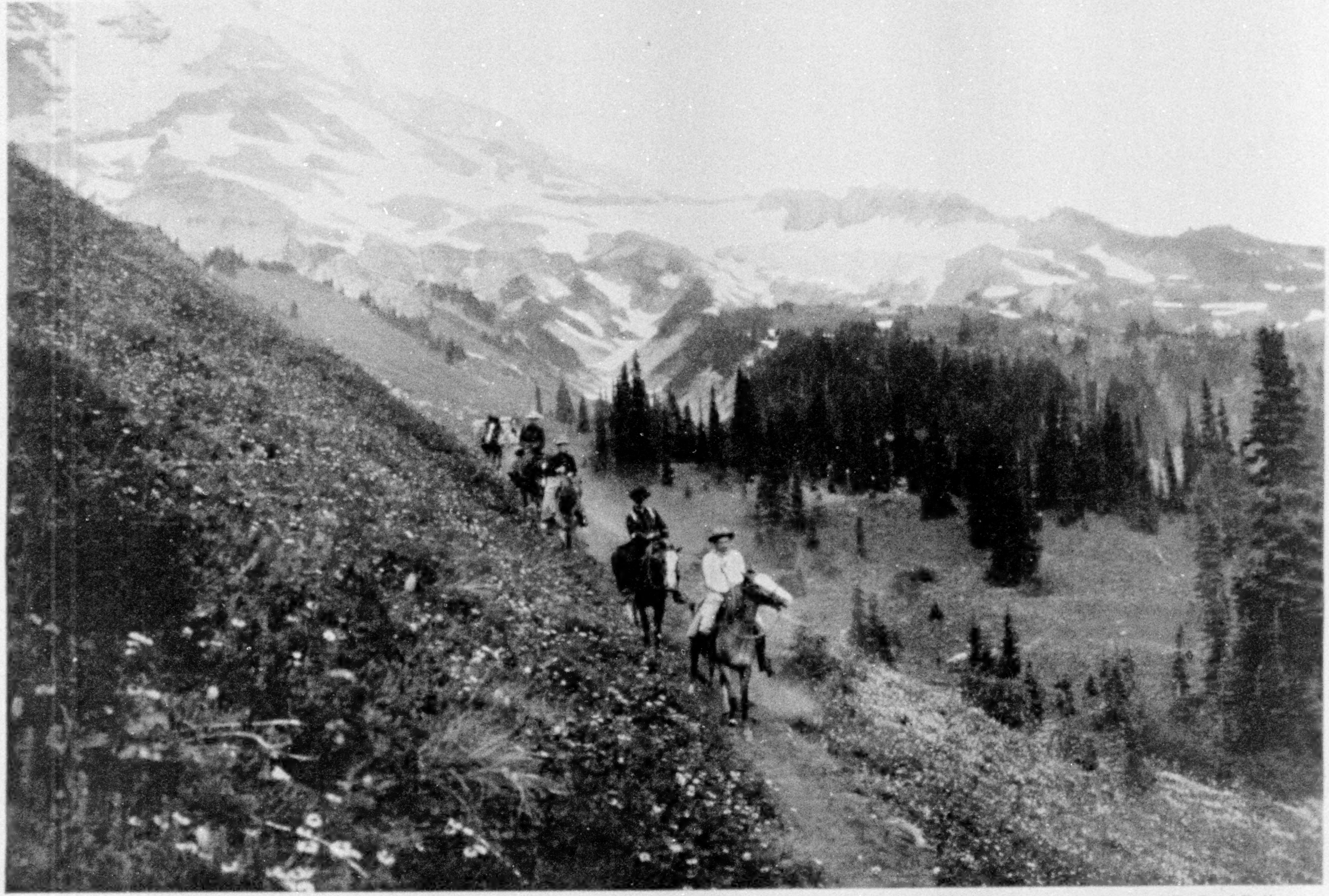


Courtesy of Chicago, Milwaukee and St. Paul Railway

MOTORING ON GLACIER ROAD: MT. RAINIER NATIONAL PARK, WASHINGTON

"In the center of it there is a lovely mountain capped with ice; from the ice-cap glaciers radiate in every direction, and young rivers from the glaciers, while its flanks, sweeping down in beautiful curves, are clad with forests and gardens and filled with birds and animals. Specimens of the best of Nature's treasures have been lovingly gathered here and arranged in simple symmetrical beauty within regular bounds."—John Muir.

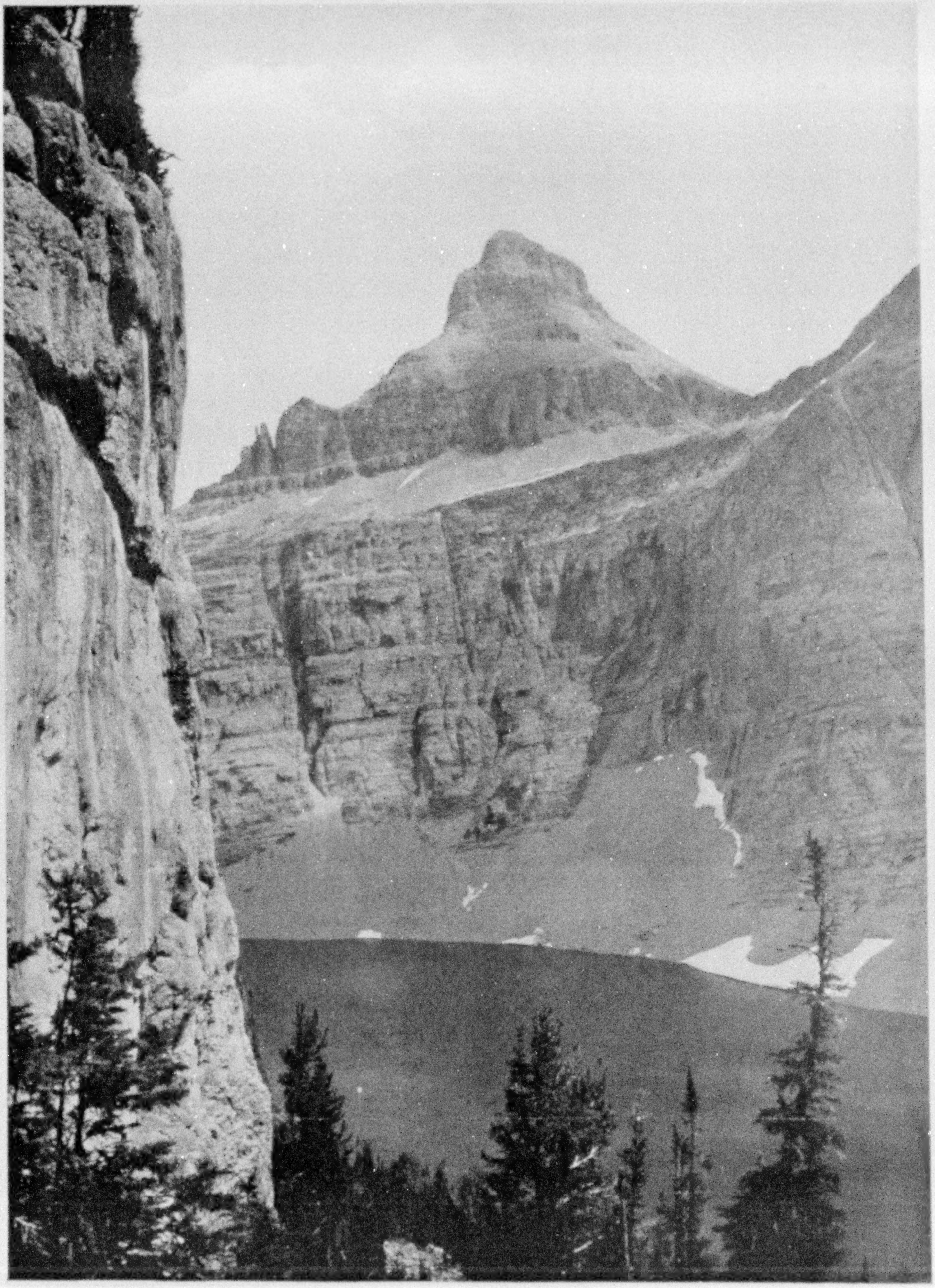
XUM



Courtesy of Chicago, Milwaukee and St. Paul Railway

TRAIL, VAN TRUMP PARK: MT. RAINIER NATIONAL PARK, WASHINGTON

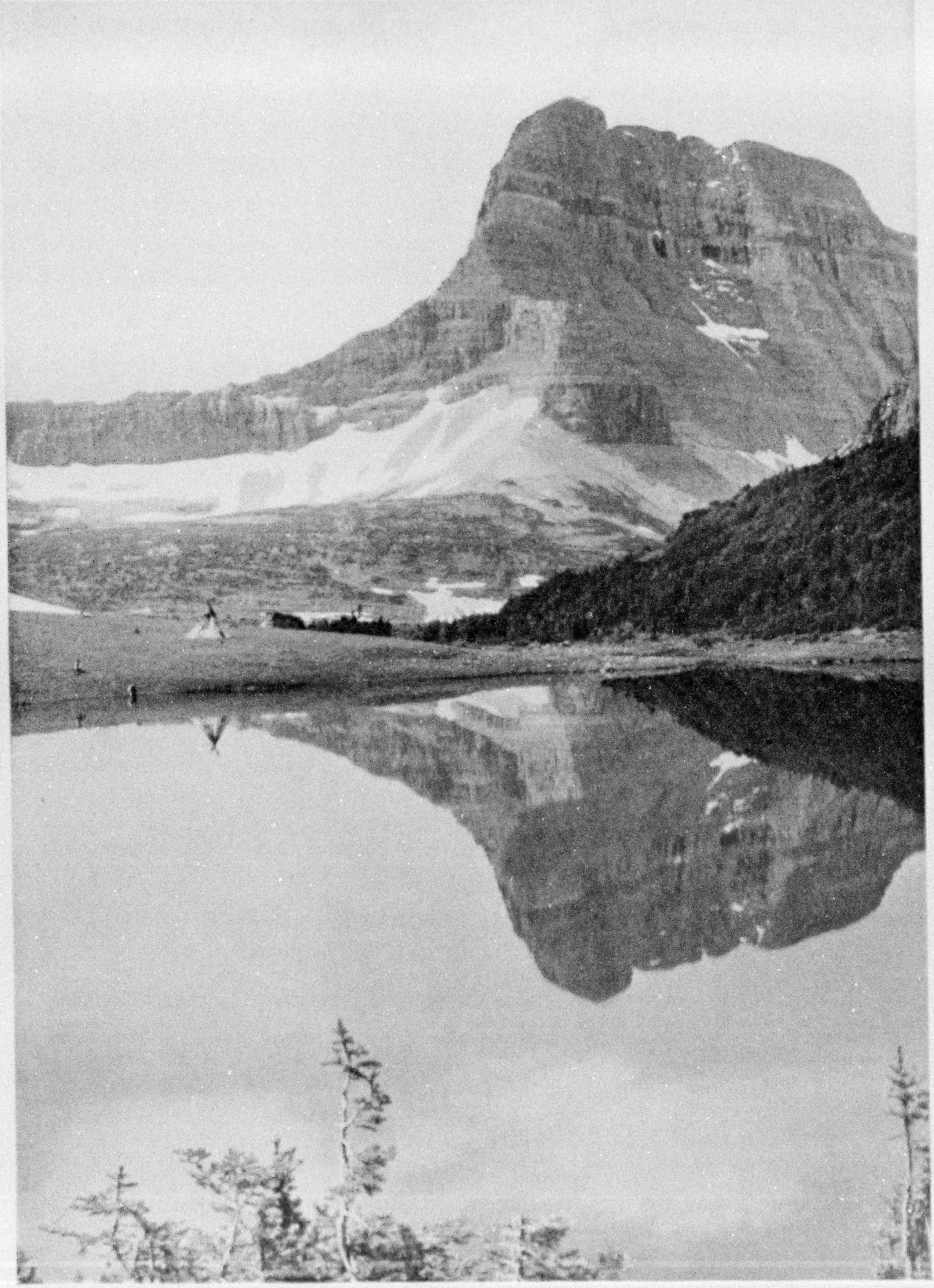
Here, in the very shadow of the snow-capped crest of Mt. Rainier—the Mountain that was God—the valleys are literally carpeted with avalanche lilies, asters, anemones, rhododendrons, and other bright flowers



Courtesy of the Great Northern Railroad

HIDDEN LAKE, REYNOLDS PEAK, OLD MAN REYNOLDS: GLACIER NATIONAL PARK, MONTANA

With its 81 glaciers and 132 lakes, with peaks whose sides have never been scaled by human ambition, and lakes whose shores have never been trod by human foot, Glacier National Park abounds in wild beauty and untouched nature.



Courtesy of the Great Northern Railroad

PTARMIGAN LAKE, MT. WILBUR, HIKEINA: GLACIER NATIONAL PARK

More people are "seeing America" this year than ever before The only advantage that Swiss scenery has over American is that it has been better advertised. Some day the tourist world will be coming to America as heretofore it journeyed to the Alps.

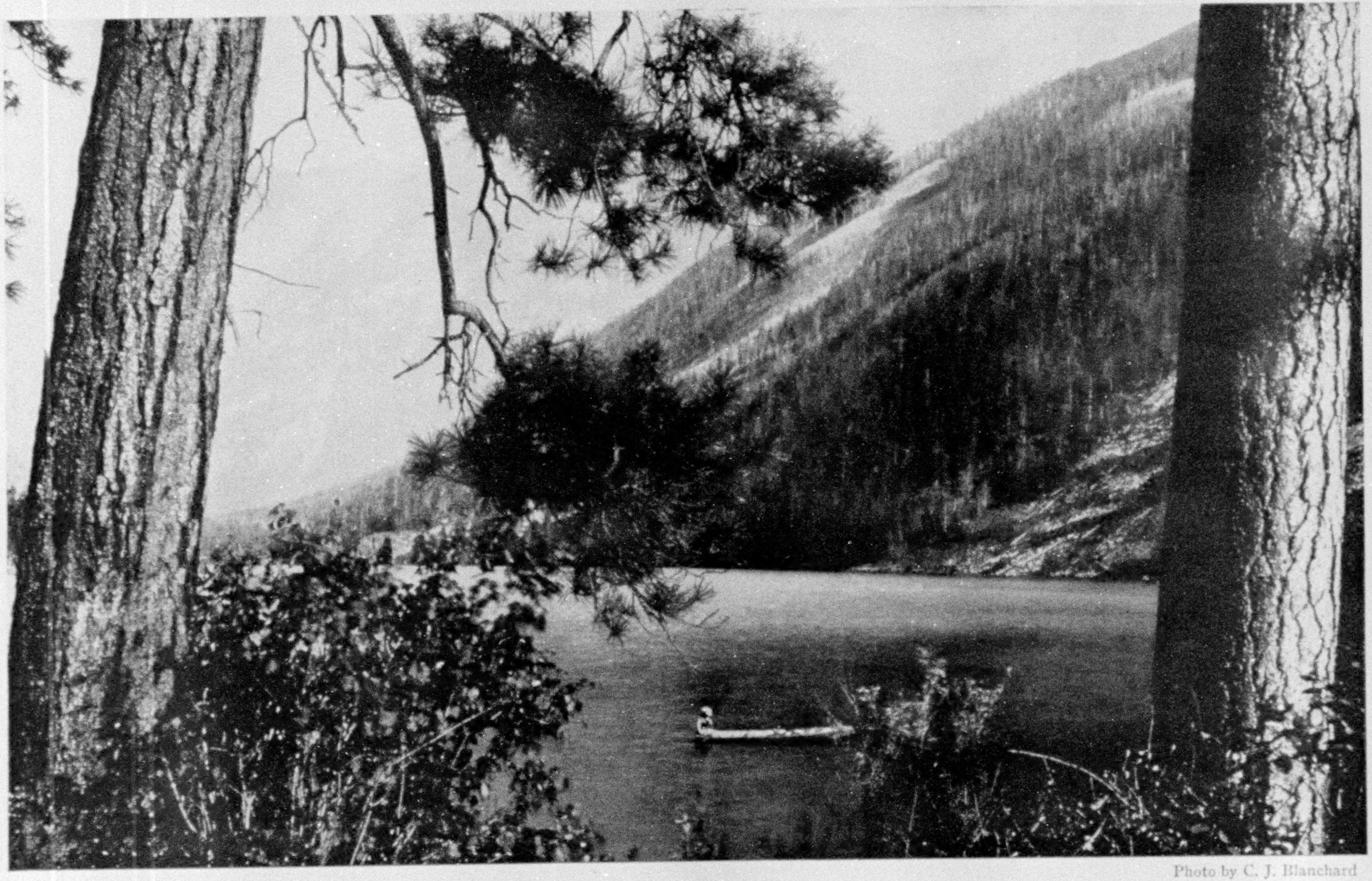
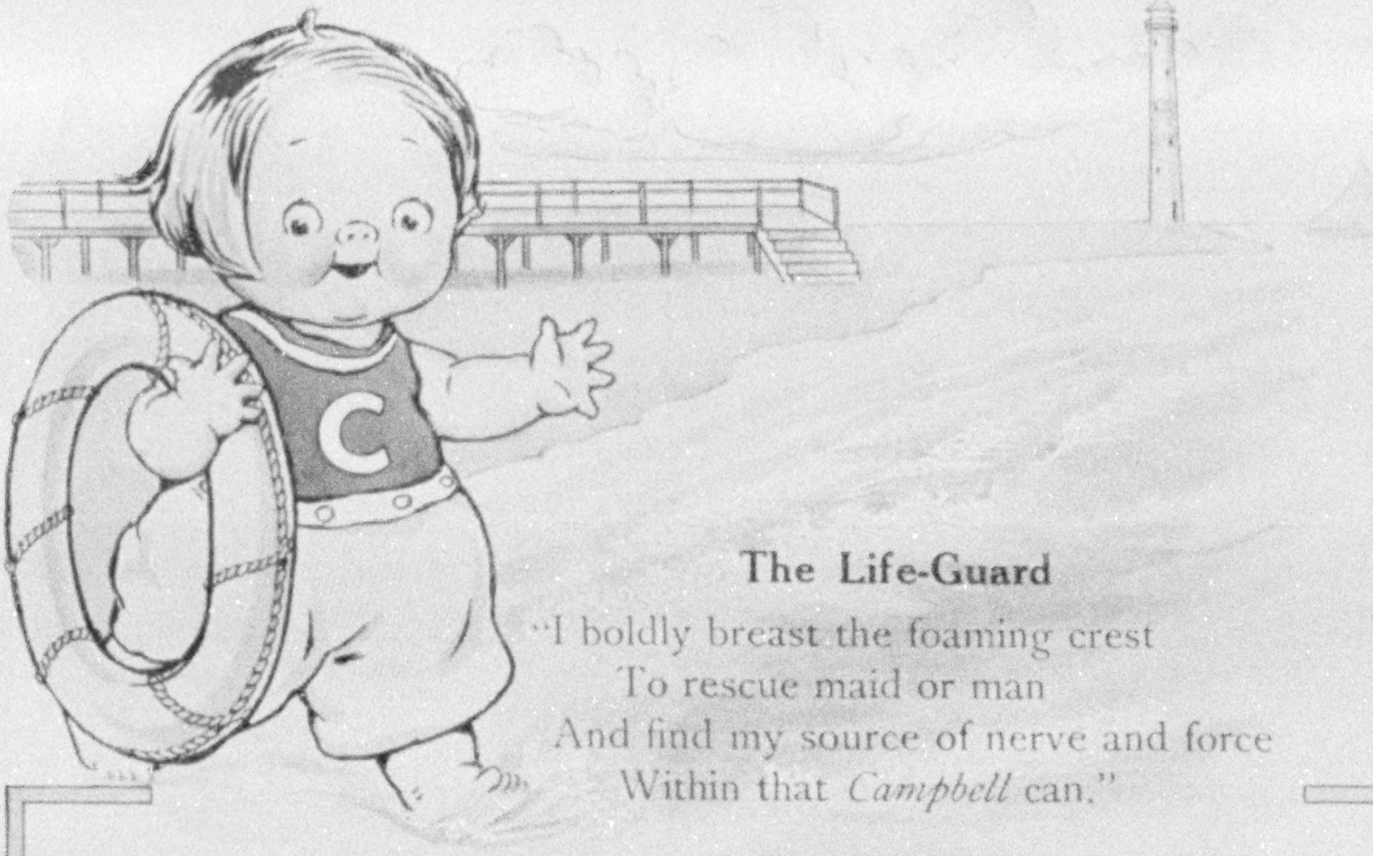


Photo by C. J. Blanchard

LAKE MCDONALD

There are two lakes of this name in Montana, one in Glacier Park and this one, which is located in Flathead County, Montana, on the Flathead Indian Reservation. It cannot be reached direct by railroad as yet



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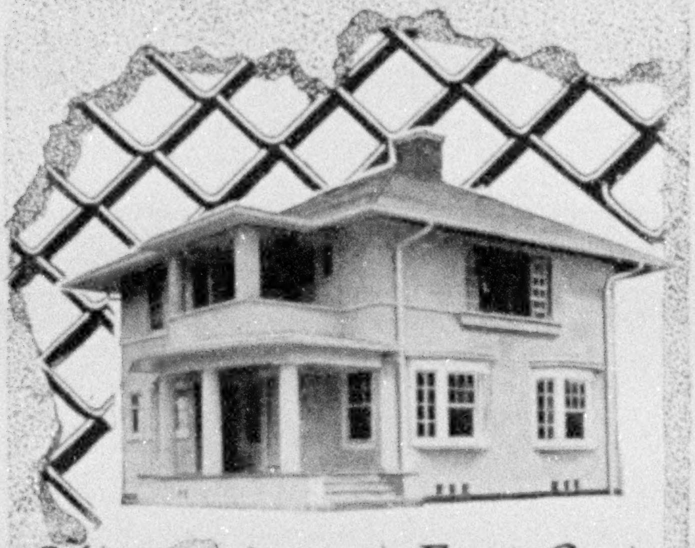

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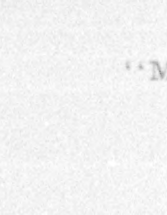

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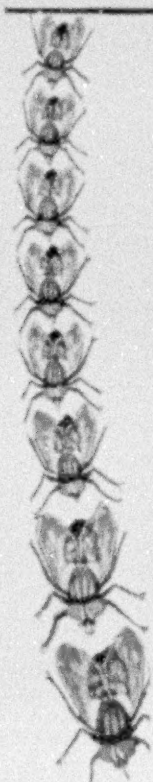


What a Million Mothers Avoid

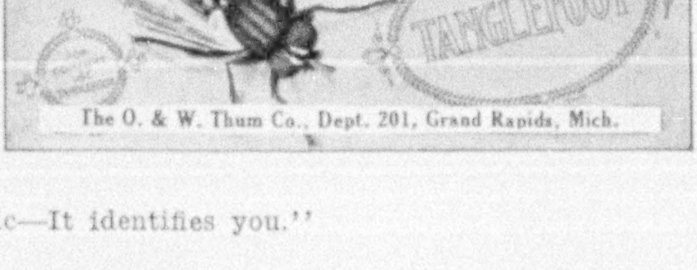
More than a million careful mothers have intuitively known the dangers of poisonous fly destroyers. They have known that such preparations contain arsenic in deadly quantities. They have realized the peril to little children.

For those who have not learned of these dangers, we quote from an editorial in the December issue of The Michigan State Medical Society, which comments upon 47 reported cases of poisoning last year as follows:

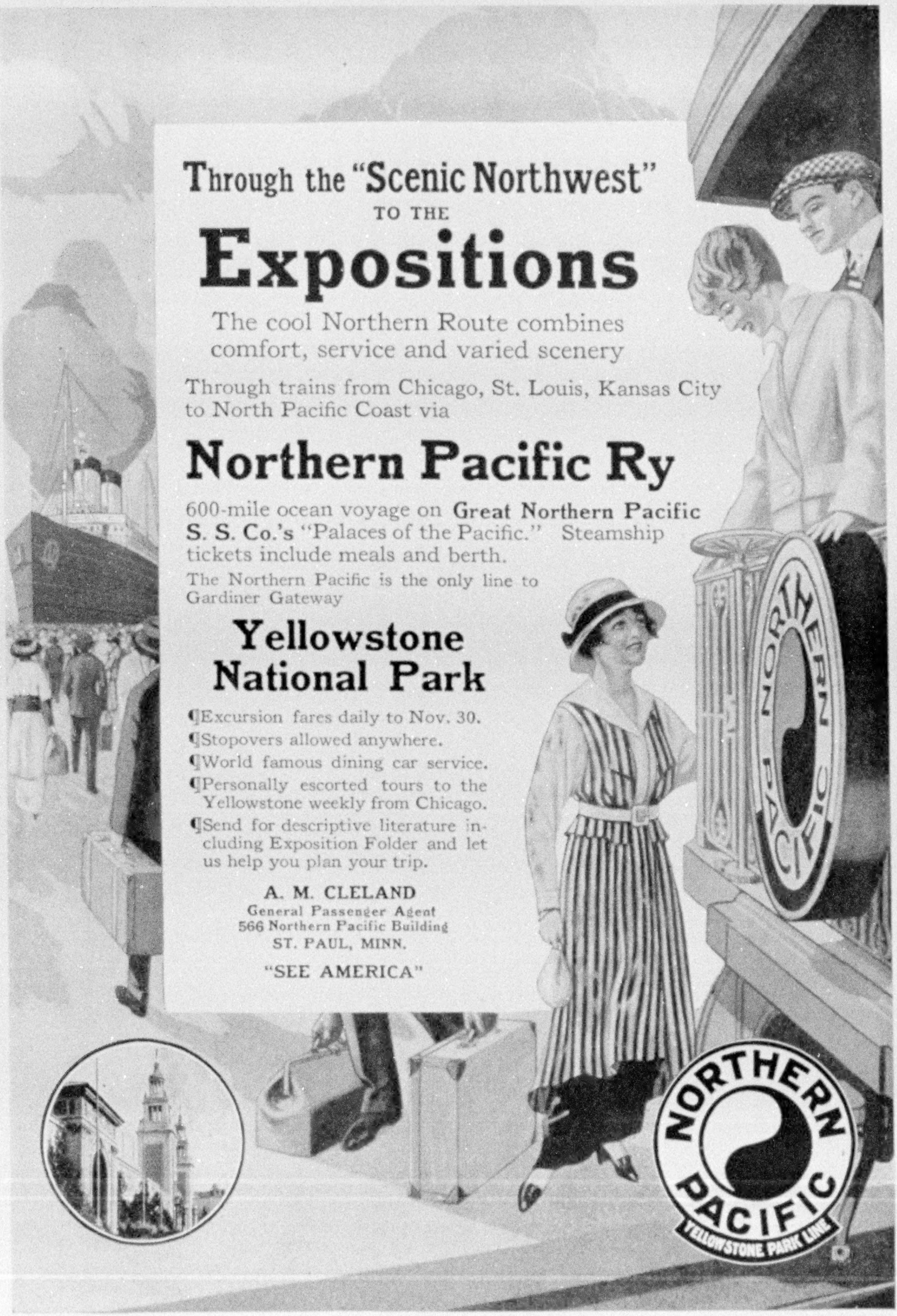
"Arsenical fly poisons are as dangerous as the phosphorous match. They should be abolished. There are as efficient and more sanitary ways of catching or killing flies. And fly poisons, if used at all, should not be used in homes where there are children, or where children visit."

TANGLEFOOT
"The Sanitary Fly Destroyer"
Non-Poisonous
Catches the Germ with the Fly

The new metal Tanglefoot Holder removes the last objection to the use of Tanglefoot. 10c. at dealers or sent postpaid, two for 25c., anywhere in the United States.



The O. & W. Thum Co., Dept. 201, Grand Rapids, Mich.



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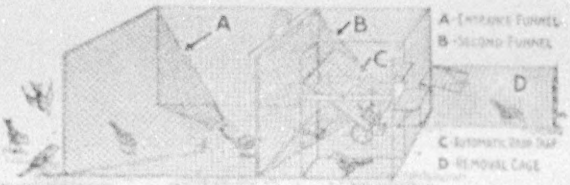
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Please detach and fill in blank below and send to the Secretary

______________________191

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Washington, D. C.:

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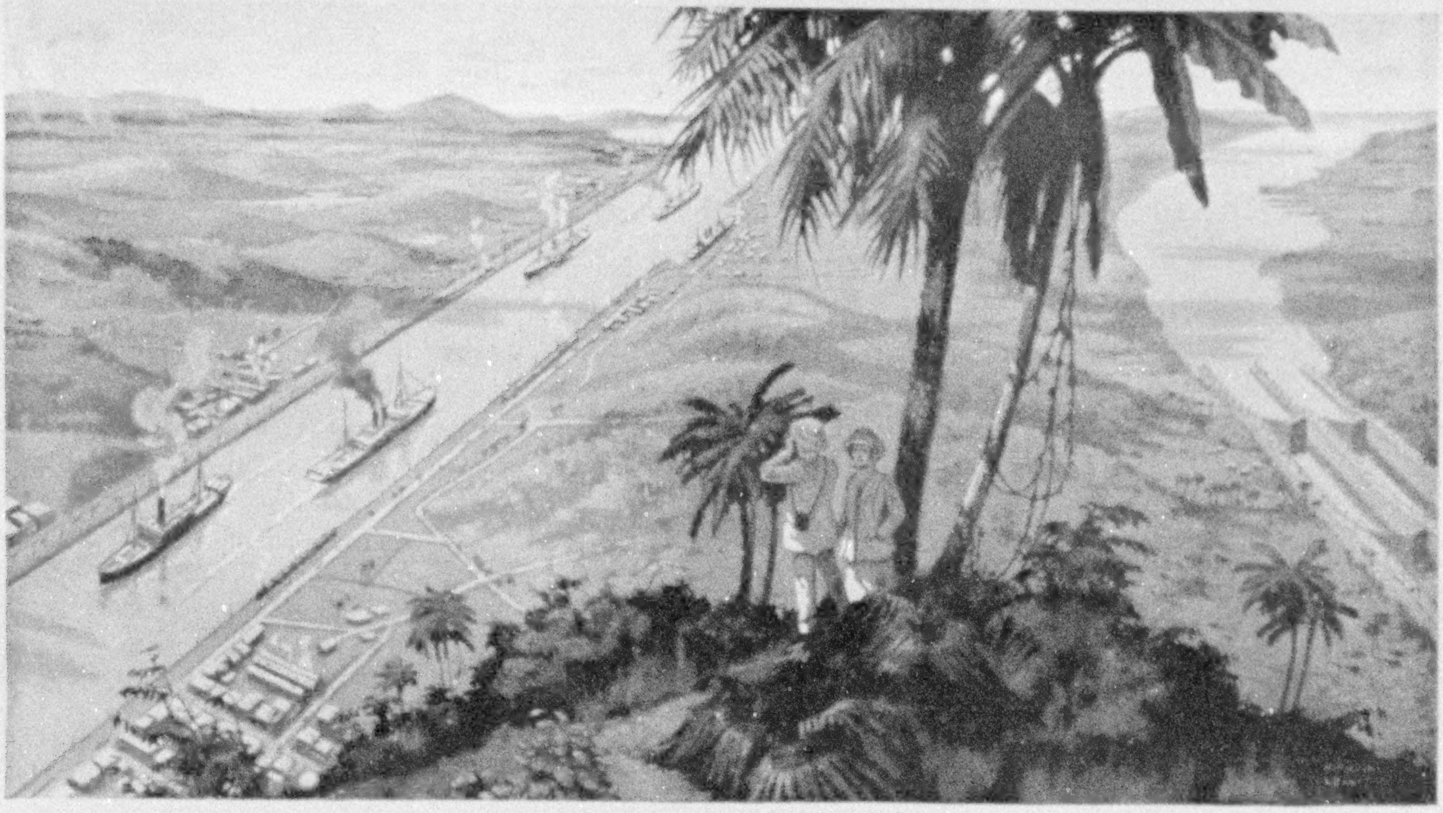
7-15 ______________________
(Write your address)



The Price of Progress

THE Panama Canal stands as one of the most marvelous achievements of the age. Into its construction went not only the highest engineering skill, but the best business brains of the nation, backed by hundreds of millions of dollars.

Suppose conditions not to be foreseen made it necessary to replace the present canal with a new and larger waterway of the sea-level type, to be built in the next ten years.

Also suppose that this new canal would be the means of a great saving in time and money to the canal-using public, because of the rapid progress in canal engineering.

This sounds improbable; yet it illustrates exactly what has happened in the development of the telephone, and what certainly will happen again.

Increasing demands upon the telephone system, calling for more extended and better service, forced removal of every part of the plant not equal to these demands. Switchboards, cables, wires and the telephone instrument itself were changed time and again, as fast as the advancing art of the telephone could improve them.

It was practical to do all this because it greatly increased the capacity of the plant, reduced service rates and added subscribers by the hundred thousand.

In ten years, the telephone plant of the Bell System has been rebuilt and renewed, piece by piece, at an expense exceeding the cost of the Canal.

Thus the Bell System is kept at the highest point of efficiency, always apace with the telephone requirements of the public. And the usefulness of the telephone has been extended to all the people.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
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A BLUEJAY FEEDING ON SUET

Photo by Ernest Harold Baynes

THIS IS THE SEASON TO STUDY BIRDS

Common Birds of Town and Country

114 Illustrations *in Colors* :: :: 52 in Black and White

WITH this book as a guide, both the city and rural dweller can soon identify the common birds, and by giving a few moments to their study now and then quickly become familiar with the names and habits of many of them. A little daily application, which can be greatly aided by the use of a good binocular, will prove enjoyable and profitable to each member of the household, not excepting the tired business man, who will find relaxation and pleasure in determining the many entirely different species in the city parks or country fields that come and go with the seasons.

"Birds of Town and Country" contains 114 illustrations in colors of the more common birds, especially drawn by the master hand of Louis Agassiz Fuertes, with descriptive text by Dr. H. W. Henshaw; an article by F. H. Kennard upon encouraging birds around the home, and illustrated with many photographs. There is also a wonderful article on bird migration, with numerous charts and maps showing the different routes of birds which migrate from pole to pole, the result of lifelong study and research by Prof. Wells W. Cooke.

These articles and illustrations have all been printed in the GEOGRAPHIC, and, because of the great demand, were republished in permanent book form. The edition is 5,000 only, and 3,000 copies have been already ordered following the announcement last month, and further editions will not be possible; therefore order at once.

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7-'15

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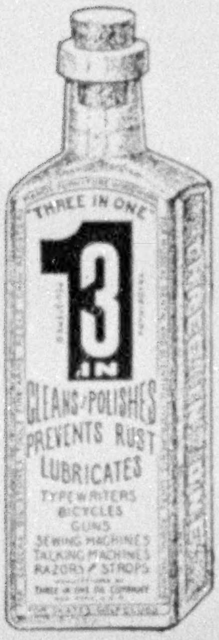

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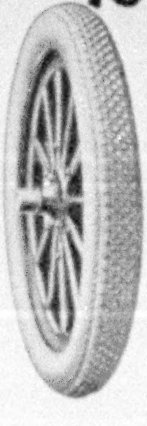

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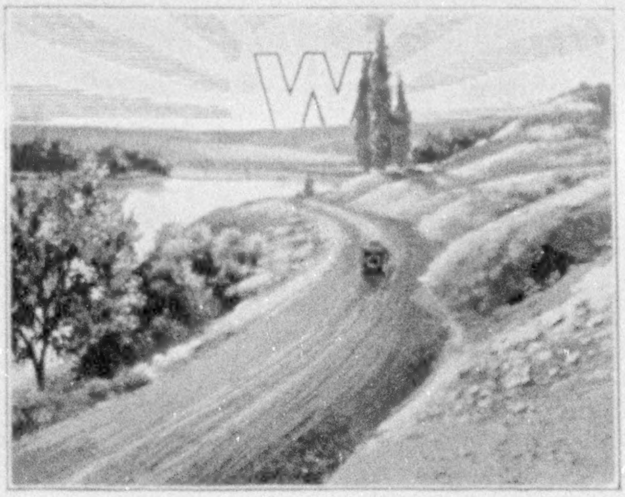

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These are not fair-weather cars or day-light cars.

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The Westinghouse Systems make certain that each of these cars will stand up electrically. Generators run at magneto speed—direct coupled armatures—entirely enclosed—windings heat-, water-, and oil-proof—these are the marks of high-grade designing and are a guarantee that your equipment will get you there.

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These unusual features have placed the Westinghouse Systems on the highest-grade cars of the country.

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The New Geographic War Map

AN IMPORTANT WORD REGARDING THE VALUABLE SUPPLEMENT IN THIS ISSUE

NEVER before has there been such a demand for maps of any part of the globe as there is today for maps of Europe.

The popular need of a really official map is quite as great as the necessity for newspapers and magazines, for whoever reads at all reads about the war and seeks to understand the shifting battle lines in its several theaters. Such a map the National Geographic Society is now able to offer to its members and their friends in an up-to-date and thoroughly accurate chart of the entire area involved, from the Dardanelles to Petrograd; from Palestine to Portugal, and from western Ireland to eastern European Russia.

The requests for a comprehensive and reliable map were so numerous that at great expense the Society has had this map compiled and drawn from the best surveys of Europe, on a scale of 84 miles to the inch, giving every important city, town, and village, and as full of detail as legibility will permit.

With this map and several boxes of assorted colored pins, one may keep intelligent trace of all the battle lines of Europe as they shift from day to day with the tide of war.

Extra copies of this map, which is 28 x 30 inches in size, and printed in four colors, at 25 cents per copy, postpaid; mounted on linen, 50 cents.

DEPARTMENT M,
NATIONAL GEOGRAPHIC MAGAZINE,
WASHINGTON, D. C.

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If several copies are desired, write names and addresses and send with your card; we will mail them for you.

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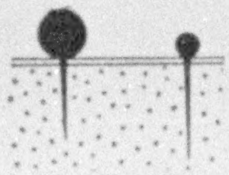

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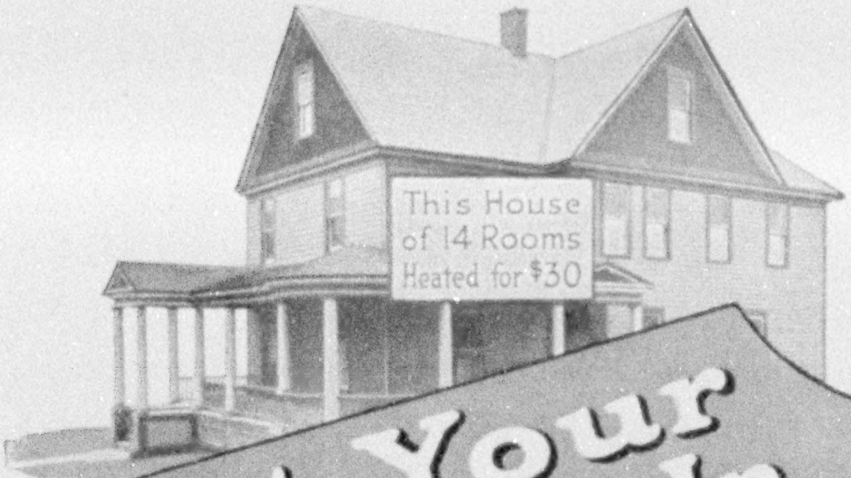

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Tell me how to cut my coal bills from ½ to ⅔ with a Williamson New-Feed.

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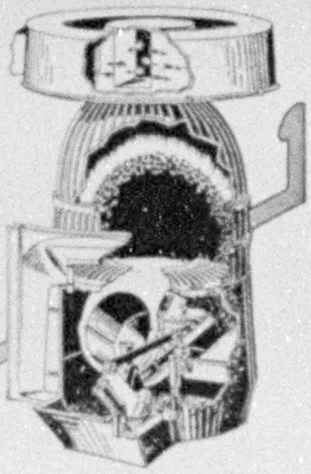

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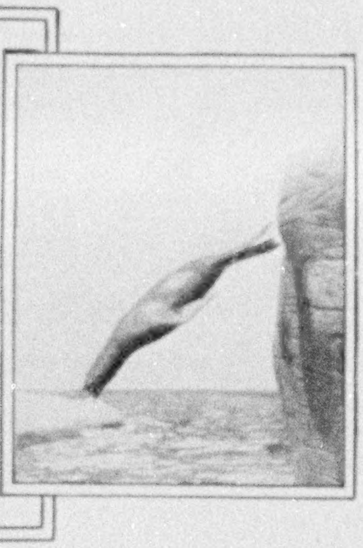

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This Basket Keeps Things Fresh

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"A Rest and a
Hawkeye
Refrigerator Basket
Add Zest to the Trip"

The repast will be ready to serve, fresh and delicious at your journey's end. A small piece of ice in a sanitary compartment keeps the contents cool. Does not drip. Dirt, germs and insects cannot touch the food. Write for illustrated folder D.

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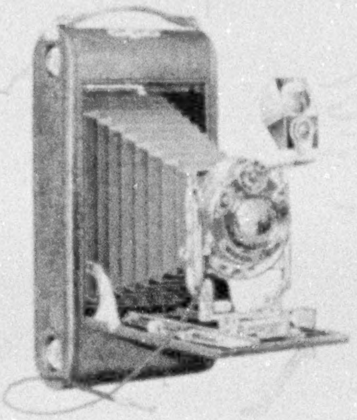

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Write us for specimen picture taken with model you contemplate buying.

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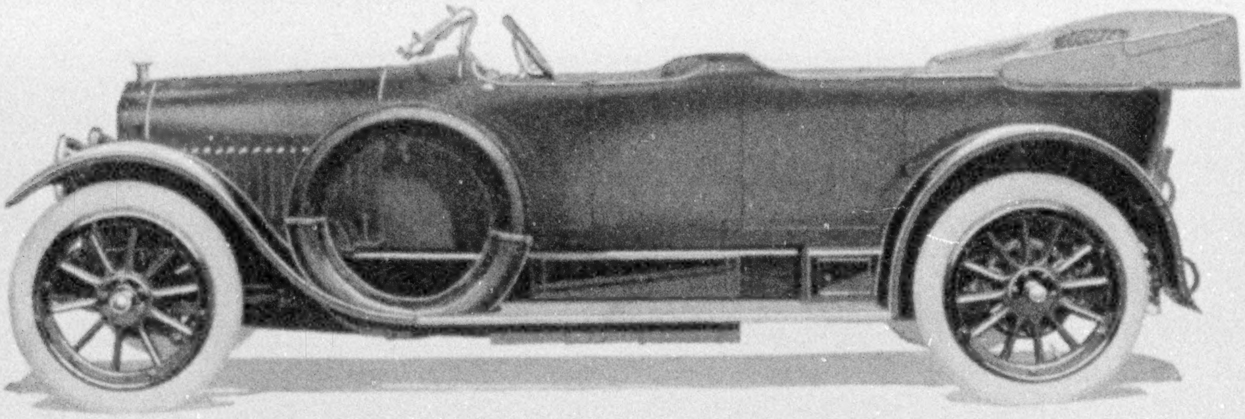

"IMITATIONS"

YOU are in the theatre. At some moment during the performance some one kindly steps from the wings and delivers "a few imitations."

These "imitations" are clever—but imitations have their limitations.

They rest upon a twist of the mouth, a lift of an eyebrow, a hunch of the shoulder, an emphazised accent.

You applaud them—sometimes—but you would applaud the ORIGINAL a hundred times more.

⁂

Leadership cannot be duplicated. It is always emphasized by imitation. Imitations are necessarily superficial—seldom as much as skin deep.

The history of White Motor Cars is one of origination, proving, introduction—and being imitated.

Months ago the latest White cars, with their finally-perfect streamline bodies, with the center cowl absorbing the conventional back of the front seat, offered inspirations for imitations.

The features which you SEE are being imitated, just as the stage imitator copies one or two prominent characteristics of the star whose leadership is so firmly established that an imitation is recognized.

It is one proposition to buy something because it looks a little bit like another.

But every standpoint of value comes into consideration when you select that which has established the principles which invite imitation.

The White body, IN ITS COMPLETENESS, makes made-to-order automobile bodies unnecessary for even the most critical taste.

Within that body, however, is the MECHANICAL completeness, which justifies the external beauty.

And there, after all, is the true standard of value. Looks, without SERVICE, would be an imitation of what you want.

⁂

Leadership must and does create value.

Imitation need create nothing. It needs but wait.

The selection and purchase of a White Motor Car signifies that you secure the tangible value involved in long years of experience, the best engineering ability, and a consistent manufacturing policy.

And that you own and drive the acknowledged leader—the car which sets motor car fashion for America.

All White dealers are showing and demonstrating the latest White cars.

THE WHITE COMPANY, Cleveland

Manufacturers of Gasoline Motor Cars, Motor Trucks and Taxicabs

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The trade-mark makes it as easy to avoid the unsatisfactory as to repurchase the satisfactory. Therefore the presumption of excellence is always in favor of the trade-marked, nationally advertised goods as against the unbranded article of uncertain origin.

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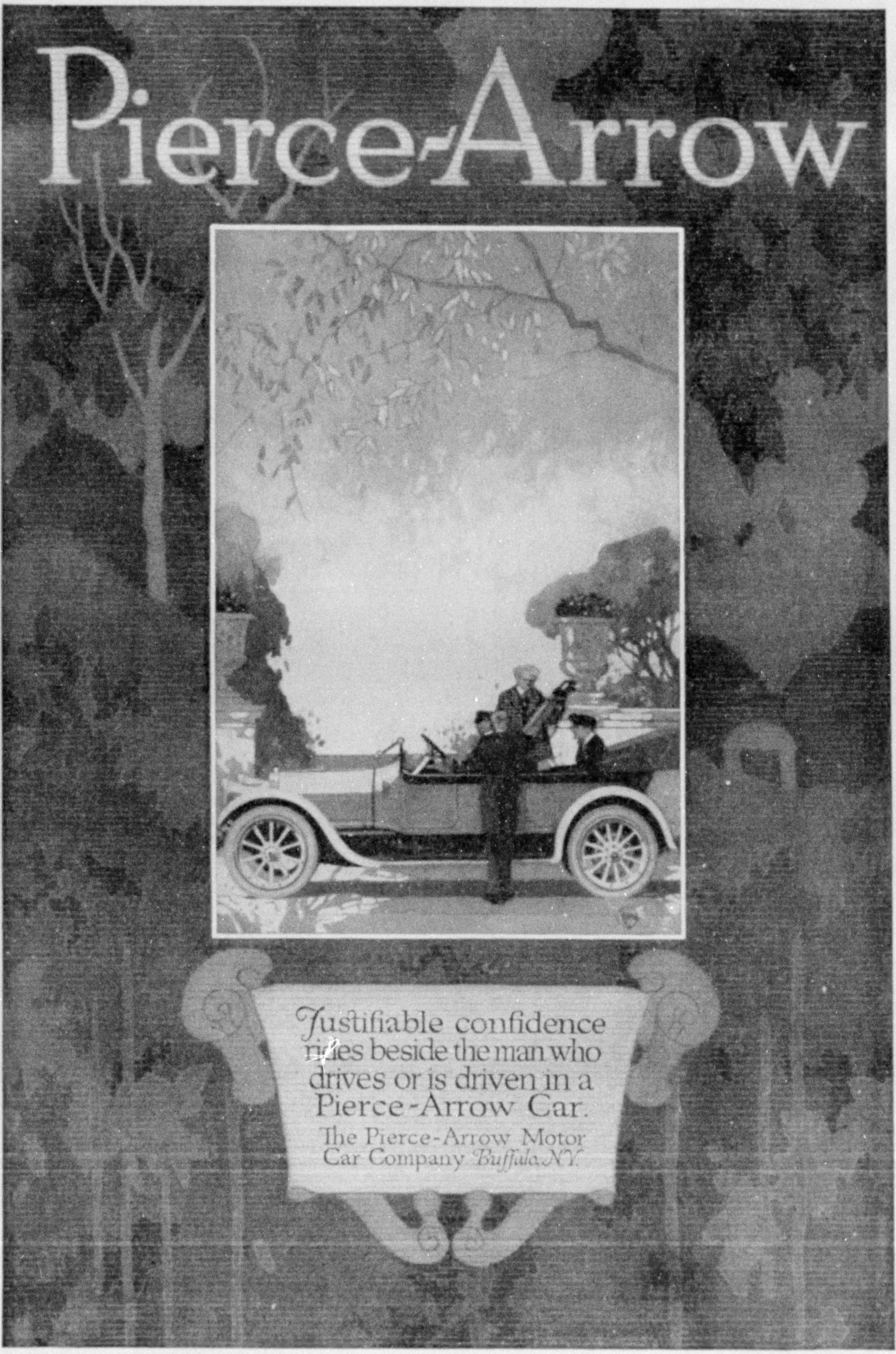

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